$14,990 Homes – with Air Conditioning . . . Pg. 9

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✓ INSIDE THIS ISSUE

RIKER LABORATORIES air conditioning requires special designing for Research, Production, and Administration buildings. Windowless, tilt-up concrete construction used to facilitate constant heat, light, humidity conditions 16

$14,990 HOMES offered with air conditioning at no extra cost by Michigan builder. Central Air Conditioning is feature of newspaper advertising 9

GAS HEATED HOMES increased 6% during 1959 to bring total to 20.2 million, according to AGA study. Breakdown of sales by states given 36

FACTORY METHODS used by former 'factory experts' to operate service business in small city (Part 1).....24

SKYSCRAPER AIR CONDITIONING UTILIZES hollow columns for peripheral ducts. Detailed drawings show how it was done 7

WORLD TRADE NEWS.....15
EDITORIAL 22
OFF THE CHEST.....23
MANUFACTURING 28
WHAT'S NEW 29-31
TECH CENTER 32
PLANT VACATION SCHEDULE 35
COMMERCIAL REFRIGERATION 37
PATENTS 40

ARW Selects Sites for 4 Conventions

CLEVELAND—The Air Conditioning & Refrigeration Wholesalers will hold its annual convention in Chicago in 1961, Los Angeles in 1962, New York City in 1963, and Chicago in 1964.

These convention sites were approved by the board of directors after a report of a special convention committee had surveyed all ARW members.

The special committee made up of E. P. Sorensen, Elmer Davey, and Paul Bodwell had been set up at the April directors' meeting to determine future convention sites.

"Historically, ARW had always held the annual convention in the late fall of the year," it was pointed out. "On those years that ARI held the All Industry Show, ARW would locate in that city.

"When ARI decided to change the time of the show to February on an every other year basis starting in 1962 it presented the ARW with the problem of changing the time of its convention or hold the conven-

(Continued on Back Page, Col. 1)

Louisiana Ponders State Certificate For Contractors

BATON ROUGE, La. — The Louisiana House of Representatives is now considering a bill which would create a state board to register all air conditioning and refrigeration contractors in New Orleans.

If the proposed measure is approved, all installation, reinstallation, maintenance, and repair work would be limited to persons or firms granted a state certificate. The final decision is expected sometime in June.

The seven-man board also

(Continued on Back Page, Col. 2)

Lennox Produces Electric Furnace

MARSHALLTOWN, Iowa — Lennox Industries, Inc. announced that it is now starting production of a compact electric furnace for central forced warm air application.

According to Lennox, "the unit will have an output of 39,000 B.t.u.h. which is sufficient to heat the average house

(Continued on Page 39, Col. 3)

In the News This Week

Scores Timid Approach To Electric Heat

ATLANTIC CITY, N. J.—Utilities and equipment manufacturers "do not fully appreciate" the potential the electric heating market offers and the approach to the market has not been "with the imagination and boldness required," Thomas G. Ayers, vice president, Commonwealth Edison Co., Chicago, told the annual convention of The Edison Electric Institute.

While air conditioning has grown rapidly—Ayers said that last year the residential cooling equipment market grossed about $800 million, up 17% over the previous year—electric heat customers, while doubling in the past three years, still number only 600,000. Ten-year projections vary from 3½ to 4½ million,

(Continued on Page 39, Col. 3)

●

Carrier Employes Sue Union for Lost Wages

SYRACUSE, N. Y.—More than 2,000 employes of Carrier Corp are said to be included as plaintiffs in a lawsuit seeking $1.2 million in lost wages filed against the United Steel Workers of America union (AFL-CIO).

It is alleged that by "force and violence" the union denied access to the Carrier plant during a strike that began March 2. Plaintiffs ask compensatory damages of $400 each, representing about four weeks' pay, plus punitive and exemplary damages. The Steel Workers union is technically still on strike at Carrier, but all but a handful of workers have returned to work.

●

Air Conditioning Unions Not In N.Y.C. Pacts

NEW YORK CITY—Unions representing practically all the main construction trades in the New York City area—except plumbers, steamfitters, and sheet metal workers—have reached new three-year agreements with employers. Present construction trade contracts expire July 1.

A strike by any of the groups who have not settled on new pacts, representing trades primarily in the air conditioning field, could result in a total suspension of construction, observers declare.

●

First Quarter Sales Spurt Noted by NCRSA

PHILADELPHIA—Average total dollar sales during the first quarter of 1960 for members of the National Commercial Refrigerator Sales Association who report their figures to the association were up 46% over the same period of 1959.

Marie Lawton, executive secretary of NCRSA, said that dollar net profit for the quarter was up 58% from the same period last year.

As of March 31, average inventory of reporting members was up 14% over the same date last year and average of accounts receivable was up 12%.

Schedule Hearings on Tariff Concessions

WASHINGTON, D. C. — July hearings, both public and closed, will help determine what tariff concessions on air conditioning, heating, and refrigeration products and parts, if any, the United States will ask from and give to other countries this fall.

Businessmen wishing to testify at the public hearings, which

(Continued on Page 4, Col. 2)

Cite 10-Year Cooling Record In Ft. Worth

FORT WORTH, Texas — In the past 10 years a total of 9,222 air conditioning systems representing 85,740½ tons have been installed here, according to a study just completed by Texas Electric Service Co.

Of the 10-year totals, 6,735 systems were classified as residential, 2,373 as commercial, 66 as industrial, and 48 as government and municipal, indicates the report made by the Commercial Dept. of the utility's Fort Worth Div.

Although the residential field leads in number of installations,

(Continued on Page 18, Col. 5)

Inside Dope

By GEORGE F. TAUBENECK

Learn to live and laugh — thus delay your epitaph

Blueprints vs. Interviews

Joe Lovely has two brothers who are "egghead" priests (both are University of Detroit philosophy professors) and another brother who has sired nine children.

The latter, who once worked for the NEWS, describes himself as a member of the Society for Propagating the Race.

Also, Joe Lovely is a Chrysler Corp. engineering executive (specializing on automotive air conditioning) who has survived umpteen management upheavals during the past 25 years. No wonder he is a *practical* philosopher! He's had it several ways.

Anyway, "Dope" round-tripped with Joe recently to Lafayette, Indiana, in the latter's experimental air conditioned Chrysler Imperial.

Dashboard of his Imperial was as complicated and mazily push-buttoned as the cockpit of a B-49 bomber.

So interested was Joe in these dials, etc., that we got lost in southern Indiana.

In a situation like that, reporter "Dope" automatically would have asked questions from natives. Engineer Joe Lovely, however, ran true to type.

He steered the ultra-instrumented Imperial into a gas-station, where he could "read" the map better.

And he *didn't* ask anybody around there which way to turn.

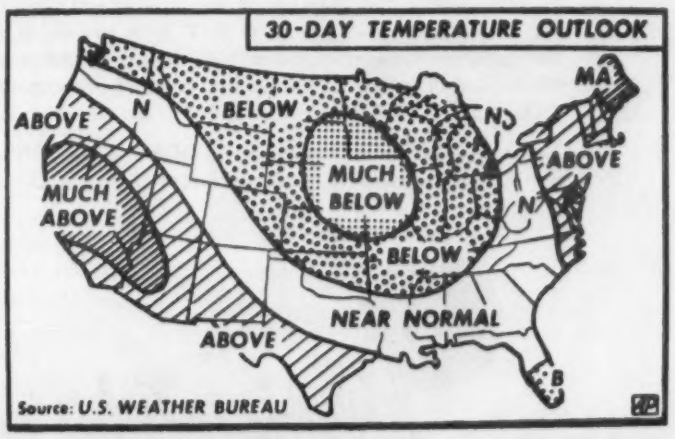
Result: we got there. But it just goes to show you the difference between engineers and reporters. The latter ask questions. The former trust, and understand, blueprints.

Ignatius Donnelly, Prophet

"New York contains now 10 million inhabitants; it is the largest city that is, or ever has been, in the world. It is difficult to say where it begins or ends; for the villas extend, in almost unbroken succession, clear to Philadelphia."

Above description refers to a future New York in the year 1988. It was prophesied in 1888 in a book entitled, "Caesar's

(Continued on Page 10, Col. 1)



THE U. S. WEATHER BUREAU'S forecast for the 30-day period to mid-July calls for temperatures to average above or much above seasonal normals over much of the West Coast and the Southwest, over the Northeast, and along the upper Atlantic Seaboard. Near-normal or cooler-than-usual temperatures are in store for the rest of the nation. *(Weather outlook for week on p. 39.)*

Peddling, Chiseling

Southern Calif. Generals, Subs To Confer on Bidding Problems

LOS ANGELES—A solution for bid peddling and bid chiseling is being sought in this area.

Henry B. Ely, executive secretary of the Refrigeration & Air Conditioning Contractors Association of Southern California, said the Southern California Chapter of Associated General Contractors and various subtrades would meet during June, seeking agreement on the sub-bid problem.

Ely stated that AGC recently wrote to various subtrades including RACCA of Southern California and said:

"We are firmly convinced that bidding methods utilized in the past by contractors are outmoded and are not adequately geared to meet present day requirements in view of the expanded construction market and the greatly increased number of contractors in all construction."

Meetings during May between AGC and various subtrades revealed an AGC plan to provide bids from subcontractors be submitted at a deadline prior to the general contractor bid openings.

After receiving sub-bids there would be provisions restraining the general contractors from chiseling. The various subtrades involved consider the AGC proposal significant and are giving it their careful consideration, Ely indicated in his statement.

Failures Fewer, Liabilities Higher In '59

NEW YORK CITY—Failures of air conditioning, plumbing, and heating contractors in the United States during 1959 numbered a few less than in 1958, but their total liabilities were higher.

So indicates a survey of the field by Dun & Bradstreet, Inc.

The survey found 339 contractor failures during the year, as compared with 357 in 1958, which was the highest in any year since Dun & Bradstreet started these surveys in 1934.

Total liabilities of $11,570,000 in 1959 were higher than the $11,116,000 in 1958. But they were less than the peak years of 1956 and 1957 when liabilities were $12,997,000 and $12,164,000, respectively.

Dun & Bradstreet reported 117 failures for the first quarter of 1960 with total liabilities of $6,670,000. This total seemed quite high to James A. Miller of the Mercantile Agency, but he said that a large portion of failures may occur in that period.

Analyzing the 339 failures during 1959, Dun & Bradstreet found that 141 of them, or 41.6% failed because of incompetence. Another 93, or 27.4%, failed because of unbalanced experience.

Unbalanced experience means, according to the agency, experience not well rounded in sales finance, purchasing, and production on the part of an individual in the case of a proprietorship, or of two or more partners or officers constituting a management unit.

Third major cause of failure was lack of managerial experience. This accounted for 59 failures, or 17.4%.

All other causes of failure were minor compared to these. Neglect was the stumbling block for 19 contractors, lack of experience in the line for 14, fraud for three, and disaster for two. For eight contractors the reason was unknown.

Apparent causes of failure are listed below, in order of frequency. Because some failures are attributed to a combination of apparent causes, the totals exceed the total number of contractors and 100%.

Apparent Cause	No.	%
Inadequate Sales	137	40.4
Competitive Weakness	98	28.9
Receivables Difficulties	63	18.6
Heavy Operating Expenses	25	7.4
Poor Health	12	3.5
Inventory Difficulties	7	2.1
Excessive Fixed Assets	6	1.8
Bad Habits	4	1.2
Marital Difficulties	2	0.6
Irregular Disposal of Assets	2	0.6
Poor Location	1	0.3
Strike	1	0.3
Others	29	8.6

Only major changes in the order of these apparent causes, as compared with 1958, was in competitive weakness and in receivables difficulties. In 1958, receivables difficulties were the apparent cause of 29.7% of failures and competitive weakness of 25.8%.

Ben Hyatt, Detroit Service Pioneer, Dies

DETROIT — Ben Hyatt, pioneer in refrigeration service work, died here June 8.

Hyatt entered into refrigeration service work in the early 1920's and at one time was service manager for Copeland Refrigeration Corp. He later operated his own refrigeration service business, and at the time of his death was a field representative for J. M. Oberc, Inc., supplies wholesaler in Detroit.

April Distributor Sales 25% Over '59

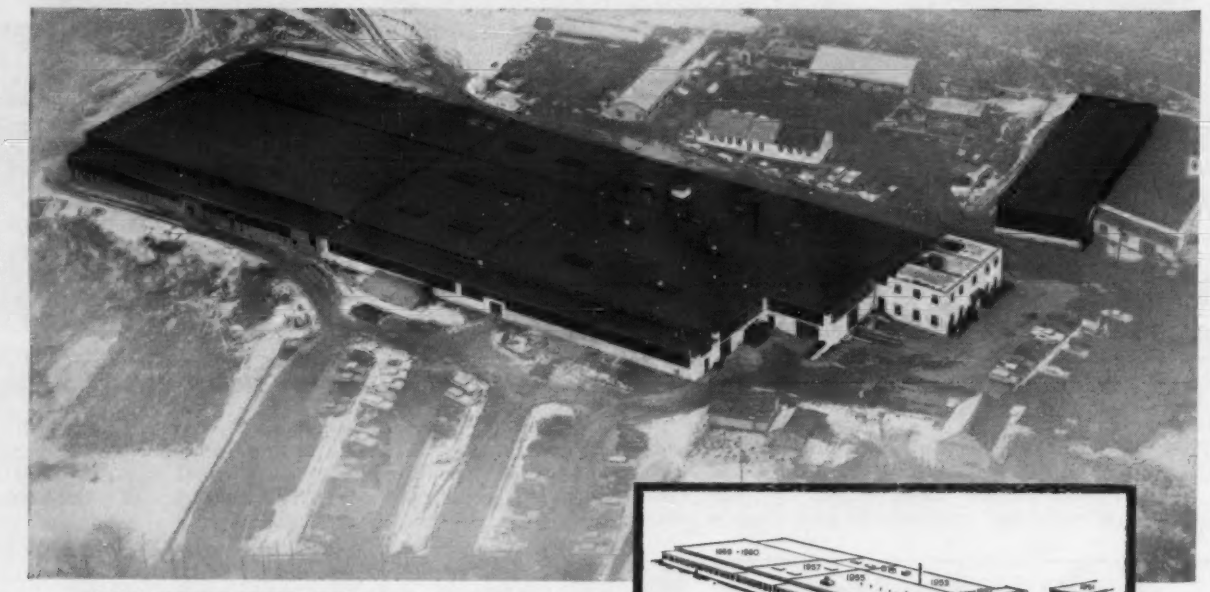
WASHINGTON, D. C.—Sales of air conditioning and commercial refrigeration equipment distributors in April rose an average of 25% over a year ago and were 27% ahead of March, according to the monthly wholesale trade report of the Census Bureau.

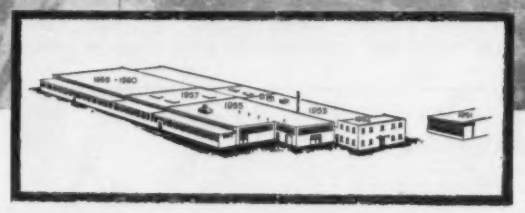
For the first four months of this year, the distributors' sales gained 28% compared with the corresponding period of 1959. Their inventories at the end of April were 7% higher than a year earlier and down 3% from a month earlier.

The report also showed that April sales of plumbing and heating equipment and supplies distributors declined 4% compared with the same month of 1959 and increased 4% compared with March.

For the January-April period, their sales were 2% better than for the the like period of last year. Their inventories on April 30 were up 7% from the end of April, 1959, and down 3% from the end of March.

SET FOR THE SOARING SIXTIES





AERIAL VIEW OF KENSICO TUBE (above) shows modern plant with new addition nearing completion at top left of photo. Inset (right) Kensico's year-by-year growth.

PACE-SETTER during a period of phenomenal growth in northern Westchester County, N. Y. Kensico Tube is Mt. Kisco's largest manufacturing business. Products include: hard and soft copper water tube; copper air conditioning, refrigeration and instrumentation tube; and copper tubing for propane gas lines, heat exchangers, automotive and industrial applications. Now, after more than a decade of corporate growth and expansion of production and marketing facilities, Kensico is set to meet the challenge of the SOARING SIXTIES.

IN 1950, CONSTRUCTION of first new building was started. Kensico had been chartered under N. Y. State Law in 1945. Under present management since 1948. Until 1951, company was located in an old cider mill which it leased (floor space 8500 sq. ft.).

TODAY, AFTER PUTTING UP 4 MORE ADDITIONS, Kensico has more than 60,000 square feet of modern fireproof plant and office space.

BY SPRING, 1960, Kensico expects to complete a new 40,000 square foot addition to the plant. Total plant and office space will then exceed 100,000 square feet.

PRODUCTION HAS INCREASED with each addition since 1950. It will be still further increased in both capacity and range of sizes by the new 1960 addition.

IN THE TEN YEAR PERIOD, 1950-1960, Kensico has had a 7-fold growth in gross sales.

EFFECTIVE FEBRUARY 1st 1960, Kensico Tube Company Incorporated, Mt. Kisco, N. Y., merged with Robinson Technical Products, Inc., Teterboro, N. J. Robinson also has other corporate facilities at Hingham, Mass., and Santa Monica, California. The merger strengthens Kensico's position in engineering and metallurgy and places new technological know-how and experience at the disposal of Kensico's customers. Kensico's new name is KENSICO TUBE COMPANY DIVISION — ROBINSON TECHNICAL PRODUCTS, INC.

Kensico Tube
COMPANY DIVISION
Robinson Technical Products, Inc.

MOUNT KISCO, NEW YORK

Kensico Products are also Available Through Warehouse Distributors and Sales Representatives in Cambridge, Mass.; Middlebury, Conn.; Buffalo, N. Y.; Lindenhurst, N. Y.; Goshen, N. Y.; Roselle, N. J.; Philadelphia, Pa.; Flourtown, Pa.; Pittsburgh, Pa.; Cleveland, Ohio; Detroit, Mich.; Evanston, Ill.; St. Louis, Mo.; Milwaukee, Wisc.; Durham, N. C.; Berwyn, Ill.; Ft. Lauderdale, Fla.; St. Petersburg, Fla.

New ARW Regional Group Formed In Upstate N. Y. and Border Pa. Area

CLEVELAND — All New York ARW members north of Poughkeepsie, including Wilkes Barre and Scranton, Pa., have formed a new regional group under the sponsorship of national headquarters, it was announced by the Air-Conditioning & Refrigeration Wholesalers.

It shall be known as Region #10, a number that had been unassigned heretofore. With the formation of this region, ARW now has 12 regional groups throughout North America.

Prior to formation of this new region, the territory had been split between Region #2 which included metropolitan New York City and northern New Jersey and Region #5 composed of western Pennsylvania, Ohio, West Virginia, Indiana, Kentucky, and Michigan.

The ARW directors were petitioned by this group of wholesalers to set up this region. In their petition, they felt that such action would permit wholesalers with more common problems to meet and resolve these problems.

In addition, it would encourage those non-members of ARW in their area to affiliate. To back up their claim four applications for membership from non-affiliated wholesalers were presented along with the petition.

The first meeting of the New York region took place on May 1 in Syracuse, N. Y. Elected chairman of the Region was Frank Meier of Meier Supply, Binghamton, N. Y., and R. D. Marshall of R. D. Marshall Co., Albany, N. Y., was chosen as secretary-treasurer. Tom Jordan of Jordan Supply, Buffalo, was nominated director to serve on the national's board.

Formal acceptance of the region will take place during the annual meeting of ARW to be held aboard the *S.S. Hanseatic* in October.

The four new members of ARW are: Meier Supply, Binghamton; Brady Supply, Elmira; Nohle Refrigeration Supplies, Rochester; and Empire Refrigeration Supply Co., Syracuse, according to the announcement.

NLRB Ruling Curbs Peaceful Picketing For Recognition

WASHINGTON, D. C. — The National Labor Relations Board unanimously held that a union may not legally conduct peaceful picketing for recognition by an employer if it fails to file a petition for a board-conducted representation election of the employes within a reasonable time not to exceed 30 days from the start of the picketing.

The board also held that picketing for informational purposes is also unlawful if it results in stoppages of pickups and deliveries to the affected employer.

The decision was the first NLRB ruling under Section 8 (b) (7) (C) of the 1959 Act amending the basic Labor Management Relations Act.

In it, the five-member board —Chairman Boyd Leedom and members Philip Ray Rodgers, Stephen S. Bean, Joseph Alton Jenkins, and John H. Fanning— directed Local 239, Teamsters, to stop picketing Stan-Jay Auto Parts & Accessories Corp., Long Beach, N. Y., to force the company to recognize or bargain collectively with the union, or to force or require Stan-Jay employes to accept the union as their representative.

NHAW Region 10 Studies Trade Practice Rules

LOS ANGELES — Southern California members of the Northamerican Heating & Air-conditioning Wholesalers Association possess detailed information on the application of Federal Trade Practice Rules for their industry following a luncheon meeting with Wilbur R. Bull, executive director of NHAW.

Representatives of industry wholesalers participated in the discussion of the rules and heard suggestions for the elimination of certain undesirable practices at the recent luncheon at Rodger Young auditorium.

The meeting was held under the auspices of the Los Angeles Trading Area Group, Region 10, of NHAW.

George T. Hall of George T. Hall Co., automatic controls distributor, who is a trustee-adviser for Region 10, opened the meeting. R. B. Hesling of Climate Distributing Co., a national vice president, was chairman.

NHAW has established a $100,000 national educational fund. A primary purpose of the educational program is to standardize and upgrade industry practices.

All 11 of the Federal Trade Practice Rules for the wholesale industry were outlined at the meeting. Discussion was conducted regarding rules relating to customer rebates, refunds, discounts, selling below cost, types of discrimination between customers, payola, and conspiracies in restraint of trade.

Bull, who is a member of the Industry Committee of the Federal Trade Commission, impressed upon the group the great need for broader understanding and voluntary compliance with the rules.

Century motors circulate warm air

Century motors are helping circulate warm air in hundreds of thousands of domestic furnace systems like the one shown here. Why are Century furnace blower motors so popular? The answer is simple . . . quiet and dependable operation. You make fewer nuisance service calls. You make more profit on each job with Century motors.

Here are some of the features that help make this record possible:

FOR DEPENDABILITY: Insulation consists of heavy "Mylar" slot cells and high temperature baking varnish . . . combination gives high mechanical and electrical strength. Lubricating method is designed to withstand warm air furnace operating conditions. And other features like the trouble-free governor and automatic thermal overload protection increase dependability.

FOR QUIET OPERATION: A cushion base with resilient rings reduces transmission of sound vibrations . . . dynamically balanced rotor gives smooth operation . . . sleeve bearings with shaft floating on film of oil means belt can be pulled up without bearing rumble . . . all contribute to quiet operation of Century furnace blower motors.

FOR MORE INFORMATION: contact your nearest Century Electric Sales Office or Authorized Distributor.

Century Electric 48-frame cushion base motor for furnace blowers. Also available: two-speed motors for combination heating-air conditioning units; and 56-frame motors when ½-horsepower capacity and larger is required.

CENTURY ELECTRIC COMPANY

St. Louis 3, Missouri *Offices and Stock Points in Principal Cities*

Century 60-8

Gov. Hodges Will Dedicate Tenney Plant

WILMINGTON, N. C. — Gov. Luther H. Hodges, of North Carolina, will dedicate the new plant of Tenney Engineering, Inc.'s refrigeration, heating, and air conditioning products division here on Tuesday, June 21.

Headquarters of the company are at Union, N. J.

The dedication ceremony will begin at 3:30 p.m. at the plant on Sunnyvale Dr. It will be followed by an open house and plant tour.

The plant was designed "from the ground up" for the manufacture of refrigeration coils and related items, the company pointed out. Its pre-stressed concrete wall panels are movable, for future expansion and other changes at minimum expense.

Tariff Commission Schedules Hearing on Concessions

(Continued from Page 1, Col. 1)

will begin July 11, must file a request to appear on or before June 27.

One set of hearings, before the Committee for Reciprocity Information, will cover products on which the United States may seek concessions from other countries.

The other set, before the United States Tariff Commission, will concern products to be considered for possible U. S. concessions to other countries.

In addition, the U. S. Dept. of Commerce, as one of a series of export trade promotional conferences, has scheduled a conference for the air conditioning and refrigeration industry on July 6.

Participation in this conference is by invitation only. Two committees of the Air-Conditioning & Refrigeration Institute, the foreign trade and government relations committees, are cooperating with the Dept. of Commerce in connection with this conference.

Agenda will cover reduction of foreign government import restrictions and promotion of U. S. exports.

Purpose of the tariff hearings is to obtain the facts necessary to enable the Tariff Commission to determine the limit to which modifications of duties and other import restrictions, imposition of additional import restrictions, or specific continuance of existing customs or excise treatment may be extended without causing serious injury to domestic industry.

Hearings will also determine if increases in duties or additional import restrictions are required to avoid serious injury to domestic industry and the minimum increases in duties or additional import restrictions required.

A tentative list of products on which the U. S. may ask concessions and a tentative list of products on which the U. S. may give concessions have been published by the government.

Included among products on which the U. S. may ask concessions, in addition to air conditioning, heating, and refrigeration products and parts are:

Domestic heating stoves and space heaters, pipe fittings of all metals, copper tubing, electric and gas household and farm refrigerators and freezers, electric household washing machines and dryers, electric dishwashers, electric ranges, electric industrial furnaces, indicating, recording, and/or controlling instruments and parts, heat exchanger type condensers and specially fabricated parts, steam specialty heaters and parts, fluorinated hydrocarbons, glycol ethers, chlorine, carbon dioxide, pH meters, manometers, thermometers, and anemometers.

The import list is not quite so specific. However, paragraph 353 includes "articles having as an essential feature an electrical element or device, such as electric motors, fans, furnaces, heaters, refrigerators . . . and parts thereof finished or unfinished."

Presumably, this could include air conditioning equipment, too.

The negotiations with other countries is sponsored by the General Agreement on Tariffs and Trade (GATT). Sessions are scheduled to begin in September at Geneva, Switzerland.

On the basis of presently available information, the United States expects to negotiate with the Commission of the European Economic Community on behalf of the six member states — Belgium, France, Germany, Italy, Luxemburg, and the Netherlands.

It will also negotiate with 17 other nations subscribing to GATT, namely, Australia, Austria, Canada, Chile, Denmark, Dominican Republic, Finland, Haiti, India, Japan, New Zealand, Nicaragua, Norway, Peru, Sweden, the United Kingdom, and Uruguay.

Also expected to attend the sessions and participate in negotiations are Israel, Spain, Switzerland, and Tunisia.

Government officials emphasized that the United States will grant no concession on any product not included in its published list. It added that the list is exclusively for the purpose of affording interested persons an opportunity to present their views on the possibility of a concession. It does not carry any implication that a concession will in fact be offered or made on the product.

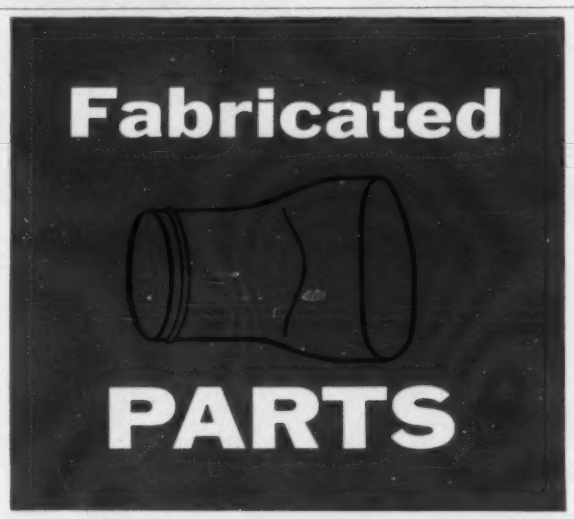
Information on how application may be made to testify, either in writing or in person, may be obtained from the secretaries of the two committees or by writing the U. S. Tariff Commission.

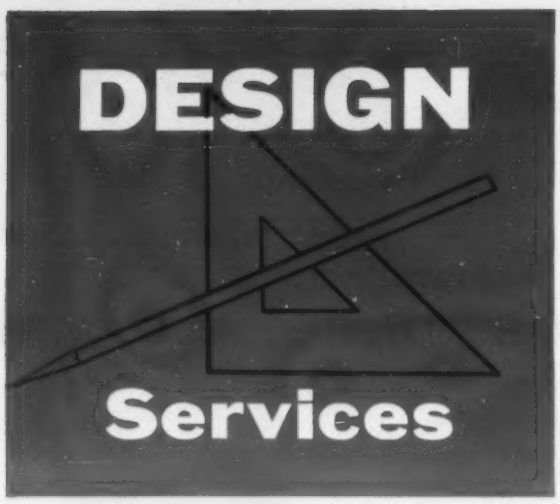
Trimester Schools To Require Cooling

NEW YORK CITY — Longer school days and longer school years, with air conditioned classrooms being considered necessary for the latter, was predicted as the major changes in educational procedures in the next decade, in a recent talk by New York State Commissioner of Education Dr. James E. Allen, Jr. before school administrators and teachers.

"The school year will be longer," Dr. Allen predicted, "with more summer schools, trimester plans . . . operating in air conditioned buildings."

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.





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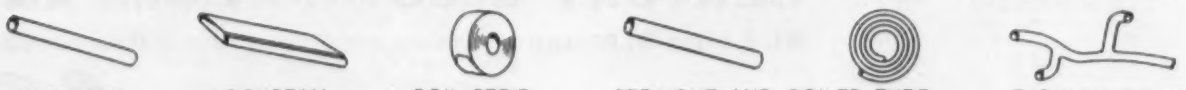


Attempts To Market Heat Pumps Broadly Called 'Unrealistic'

DETROIT—Three heat pump manufacturers have taken issue with the intention of some manufacturers to sell heat pumps over the entire country, as described in stories published in the NEWS.

"Those companies which you have reported as intending to market heat pumps across the entire country are being overly optimistic," insists the director of engineering of a well-known heating-cooling supplier which has had heat pumps "for as long as anyone except one or two."

"Unrealistic would be a better word for it," adds the vice president of a manufacturing company which is just now field testing a few units, "and is in no hurry to market them without a lot more testing."

There is no such thing as a universally applicable heat pump, insists the president of a third company which has sold heat pumps for several years, but arbitrarily restricts sales to those areas of the United States "which have reached 10° above zero only once in the last five years." A continental map in the home office of this manufacturer shades out most of the country as off limits for heat pump sales.

"Normally, we will refuse even to send descriptive literature to queries from these shaded areas," the company told the NEWS. Even with this tight control of sales, the manufacturer has experienced a 7% return of compressors from heat pumps compared to "less than 1% return from our air conditioners."

"The problems you described in the heat pump issue (Sept. 21, 1959) have not been solved in these few months," insists the director of engineering, quoted earlier. "We will continue to restrict applications to specific areas where the units can be expected to perform properly and where they can be serviced and maintained by competent personnel."

Copeland Adds Third Chicago Wholesaler

SIDNEY, Ohio — Service Parts Co., Melrose Park, Ill., has been appointed a wholesaler for the full line of Copeland Refrigeration Corp. products, the latter company announced.

This supplements the present Chicago area distribution through Chase Supply Co. and Refrigeration Supply Jobbers, Inc. All three outlets will sell the complete Copeland line ranging from ⅛ through 30-hp. compressors, and condensing units.

Managed by Pat Ravanesi, Service Parts is the 147th outlet in Copeland's nationwide distribution system.

Buffalo OHI Reelects Newman

BUFFALO—The Oil Heat Institute of Buffalo, Inc. has reelected Reginald B. Newman president. He is president of the R. B. Newman Fuel Corp.

Honeywell To Expand Golden Valley Plant

MINNEAPOLIS — A 227,000-sq. ft. addition to its 273,000-sq. ft. manufacturing plant and central distribution center in suburban Golden Valley will be constructed for Minneapolis-Honeywell Regulator Co., it has been reported.

The addition is scheduled for completion in July next year. The company then will transfer certain temperature controls manufacturing and assembly operations from Minneapolis.

The transfer, involving 1,200 workers, will give the company an additional 100,000 sq. ft. of space for office use at its main plant here and will relieve crowded conditions at another plant, it was pointed out.

The Golden Valley facility was built three years ago.

Report ARI Sections Considering Nine More Certification Programs

WASHINGTON, D. C.—Nine certification programs are in the various stages of consideration by product sections and sub-sections of the Air-Conditioning & Refrigeration Institute, according to Fred J. Reed, ARI chief engineer.

Reed noted in a report to the board of directors that the only certification program now in actual operation, the Unitary Air Conditioner program, has proved very successful in almost a year and a half of operation. His report on the progress of other programs said, in part:

"Heat Transfer Sub-Section C is planning two certification programs. The first, for room fan-coil air conditioners, is a joint activity with IBR and AMCA. The second is an ARI program covering room air-induction units. Both are expected to be initiated soon.

"The Water-Cooler Section is committed to a program for drinking-water coolers, and is presently engaged in revision of its standard as the first step.

"The Centrifugal Liquid Chilling Packages, Heat Transfer Sub-Section B, Mobile Refrigeration, Reciprocating Liquid Chilling Packages, and Valves, Driers, Fittings and Accessories Sections are all in various stages of revision of their standards as the basis for certification programs.

"The Reciprocating Compressor and Condensing Units Section is examining the problems involved in, and the possibilities of, a certification program covering at least some segment of its operations.

"Sub-Sections A and D of the Heat Transfer Section are expected to resume activity on standards in the near future, and will discuss possible programs."

Rochester Utility Pushes Home Cooling

ROCHESTER, N. Y. — The Rochester Gas & Electric Corp. is doing a strong promotional job on residential air conditioning this summer to assist dealers in the Rochester area.

The utility scheduled a series of ten newspaper ads during June. During the latter part of the month, bus cards on air conditioning will be installed in 150 Rochester buses.

LOW-COST, EASY TO INSTALL, EASY TO SERVICE LINE

by Tenney

for Back Bars, Reach-Ins,
Direct-Draw Bars,
Under-Counters, Low Boys

TENNEY all-new,

all-aluminum mx unit coolers

- RUSTPROOF, LIGHTWEIGHT ALUMINUM CASE
- COIL CONSTRUCTION completely non-ferrous
- MINIMUM PRESSURE DROP CIRCUITING, conservative ratings
- AMPLE ROOM FOR TX VALVE
- EASY TO INSTALL, keyhole slotted hangers on unit
- FACTORY ASSEMBLED unit hangers, drain fittings
- 2-WAY MOUNTING standard factory equipment on MX-9 through 17
- QUIET, EFFICIENT fan and motor combinations
- LIFE LUBRICATED standard motors; easily replaced in field

Write for Bulletin 118-58

Engineers and Manufacturers of Refrigeration and Environmental Equipment

Tenney ENGINEERING, INC.

1090 SPRINGFIELD ROAD, UNION, NEW JERSEY • PLANTS: UNION, NEW JERSEY AND BALTIMORE, MARYLAND

15 Federal Agencies Take OHI Course on Oil-Fired Heating

WASHINGTON, D. C. — Fifteen Federal agencies have enrolled in a special course which commenced May 25 at Howard university here.

The course is being conducted by the Oil Heat Institute of America and is designed to inform and advise Federal agencies in matters pertaining to the specifying of fuels and equipment for oil-fired heating plants in government buildings. The course ends June 22.

"The course, consisting of seven lectures given in a strictly non-proprietary manner by authorities in the oil heat industry, has been specially designed to meet the needs of Federal agencies," the OHI said.

Charles H. Pesterfield, professor of mechanical engineering at Michigan State university and technical secretary of the OHI's Commercial - Industrial Section, drew up the course together with Larry D. Sibley, vice president of the Electronics Corp. of America. Sibley is a vice president of the OHI and co-chairman of its C-I Section.

Arrangements for holding the course at Howard university were made by the OHI with Prof. Stephen S. Davis, acting head of Howard's Dept. of Mechanical Engineering.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Integrate Marketing For Bastian-Morley, H. C. Little Burner

LA PORTE, Ind.—The marketing organizations of Bastian-Morley Co. and its subsidiary, H. C. Little Burner Co., will be integrated under the direction of John V. Youngblood, announces Harry B. Carbon, president of Bastian-Morley.

Youngblood becomes vice president, marketing, and will headquarter at Bastian-Morley's La Porte main office. Youngblood was formerly general sales manager of H. C. Little Burner Co., San Rafael, Calif.

The field sales structures of both Bastian-Morley and H. C. Little will continue to retain their own separate identities. No changes are contemplated among either field force.

Launch Wisconsin's First Promotion Of Electrically Heated Homes

MENOMONEE Falls, Wis.—Electrically heated homes are being mass promoted for the first time in Wisconsin on a 40-lot tract here.

An all-electric model home was opened in this Milwaukee suburb late last month by Donald A. Mechelke, president of D. M. Builders, Inc. The baseboard electric heat promotion was worked out with the Electric Co., which is assisting in promoting the subdivision.

The electrically heated model is a ranch-type structure with 1,325 sq. ft. of space. The utility estimates that the living space (not including basement) can be heated for $247 per year. It is willing to spread that figure over an 11-month period, allowing the 12th month to adjust to actual costs.

Heating for the basement is not considered in this estimate. In the model, a quartz tube radiant heater has been installed in the closed-in laundry area.

Heating units in the six-room house will be controlled by nine strategically located thermostats. An automatically operating fan, working independently of the heating system, will draw off humidity.

Wisconsin Electric Heating, Inc. made the installation.

75 Mfrs. Now Make Hydronic Baseboard Heating Systems

CHICAGO — Approximately 75 manufacturers are now making baseboard heating systems for use with hydronic heating, according to the Plumbing-Heating - Cooling Information Bureau.

The number is particularly significant in view of the fact that the first baseboard heating system was installed as recently as 15 years ago, it was stated.

During the first nine months of 1959, baseboard heating systems showed an increase in sales of 34.8% over the corresponding period in 1958, the PHCIB reported.

Freeland Heads Arvin Electric Heat Sales

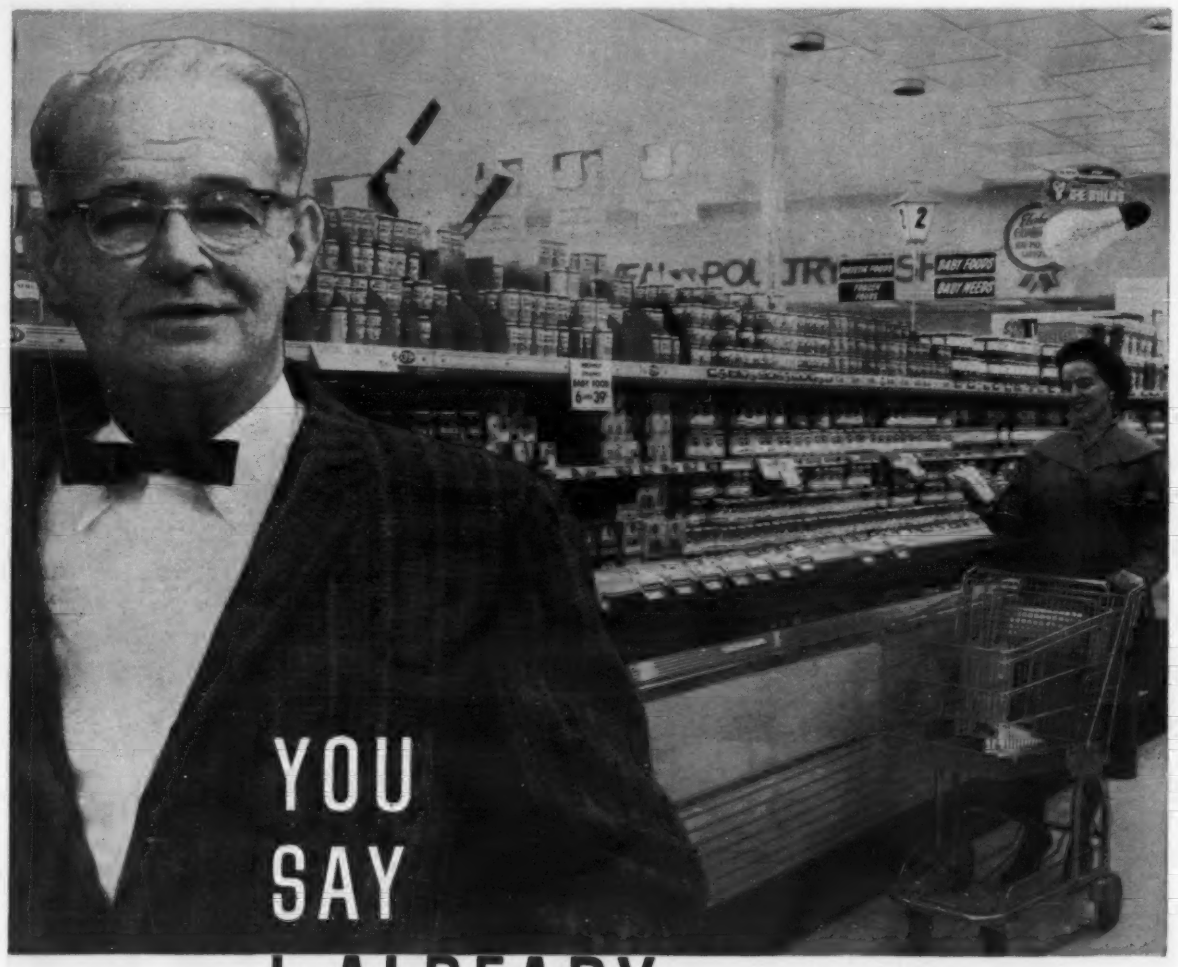
COLUMBUS, Ohio—Joseph C. Freeland, Indianapolis, has been named by Arvin Industries, Inc. as sales manager for the firm's electric heat division.

Freeland joined Arvin last year as district sales manager for the division, handling sales of Arvin primary electric heating systems in southern Indiana, Ohio, Kentucky, West Virginia, and Tennessee. For the last few months he has been assistant sales manager.

His present position is a newly-created one made necessary by the rapid growth of the division, according to Leo W. Burns, division director of sales.

Illingworth Heads Wisconsin ASHRAE

MILWAUKEE — John Illingworth of Downey Heating Co. was recently elected president of the Wisconsin Chapter of the American Society of Heating, Refrigerating & Air-Conditioning Engineers.



I ALREADY DEPEND ON TECUMSEH?

If you own a home refrigerator, freezer, or air conditioner there is a better than even chance that you have at least one Tecumseh compressor. That you are probably unaware of this fact is proof in itself of the quiet, trouble-free service you are getting. Equally efficient performance is available in Tecumseh's new line of commercial compressors and condensing units. Why not consider Tecumseh your next refrigeration opportunity?

forty million compressors in the field

TECUMSEH PRODUCTS COMPANY

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FOREIGN OPERATIONS DIVISION: Tecumseh, Michigan

CANADA: Tecumseh Products of Canada, Limited, 1667 Dundas St., London, Ont.

3 HP
Self-Contained Air Conditioner

Model PA 30-A

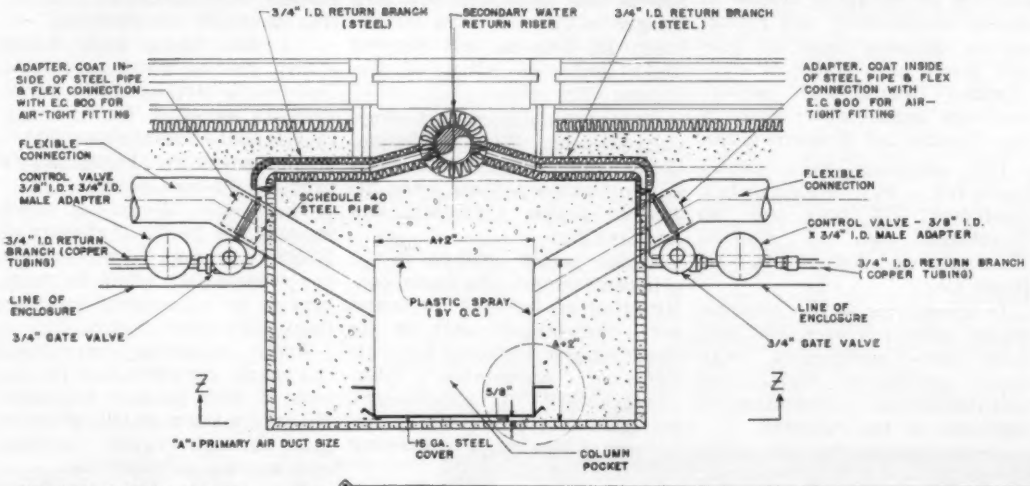
- In 2, 3, 4, and 5 HP
- Available in summer-winter heat pumps
- UL Listed for outdoor installation
- Low silhouette for flat-roof work

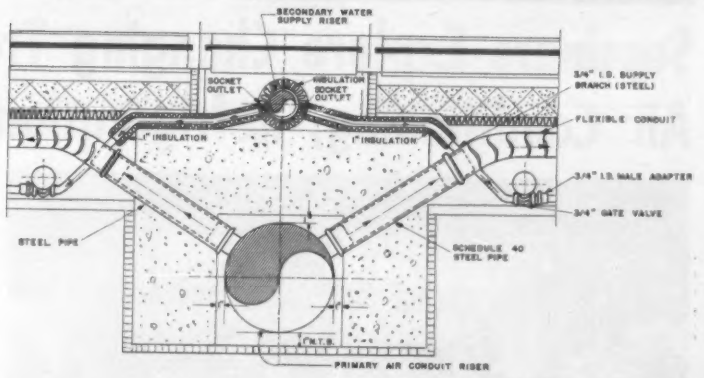
Write for details today!

HEAT CONTROLLER, INC.
Losey at Wellworth Jackson, Mich.

Skyscraper Cooling

Non-Productive 'Dead' Column Space Used As Peripheral Air Conditioning Ducts


3/4" I.D. RETURN BRANCH (STEEL)
SECONDARY WATER RETURN RISER
3/4" I.D. RETURN BRANCH (STEEL)
ADAPTER. COAT INSIDE OF STEEL PIPE & FLEX CONNECTION WITH E.C. 800 FOR AIR-TIGHT FITTING
FLEXIBLE CONNECTION
CONTROL VALVE 3/8" I.D. x 3/4" I.D. MALE ADAPTER
SCHEDULE 40 STEEL PIPE
3/4" I.D. RETURN BRANCH (COPPER TUBING)
LINE OF ENCLOSURE
3/4" GATE VALVE
A+2"
PLASTIC SPRAY (BY O.C.)
5/8"
"A"= PRIMARY AIR DUCT SIZE
16 GA. STEEL COVER
COLUMN POCKET
CONTROL VALVE - 3/8" I.D. x 3/4" I.D. MALE ADAPTER
3/4" I.D. RETURN BRANCH (COPPER TUBING)



LEFT: Typical detail of primary air riser for intermediate coils, showing use of plastic-sprayed column as peripheral air conditioning duct. ABOVE: In second building a galvanized iron duct was installed inside the U-shaped column and the open side was closed with lath and plaster.

NEW YORK CITY — Non-productive "dead" column space has been transformed into an effective air carrying system in two recently completed multi-million dollar skyscrapers, it was reported by Tishman Realty & Construction Co., Inc.

The new 20-story office building at 10 Lafayette Square in Buffalo and the 21-story East Ohio building in Cleveland, both built by Tishman, are claimed to be the first office buildings in the country to utilize the structural columns as peripheral air conditioning ducts.

"Developed by Tishman engineers under the direction of John L. Tishman, vice president in charge of construction, the significance of the new system is two-fold," the report said. "One, it eliminates the necessity of a separate duct system and two, it enables the builder to realize a sizable space saving.

"The integration of the air conditioning ducts with the structural columns was accomplished by pouring the reinforced concrete columns in a U-shape with three sides closed and one open.

"In the Buffalo skyscraper, the hollow itself was used as the duct. It was sprayed with plastic to minimize friction and then a steel plate was fitted over the open side.

"The plate was one continuous strip 20 stories high which was welded to each column by Z-bars anchored into the concrete columns. The sealing plate was of 12 gauge steel. The ducts vary from 8 in. to approximately 14 in. square.

"Altering the procedure slightly in the East Ohio building, the concrete was again poured in the shape of a U but this time Tishman engineers installed a galvanized iron duct into the hollow and closed the open side with lath and plaster."

In designing the buildings to accommodate the air conditioning system, Tishman pointed out that certain basic factors had to be taken into consideration.

"Normally," it was stated, "columns taper at the top because less support is needed there. In the case of the Cleveland and Buffalo buildings, the periphery columns, which double as ducts, do not taper.

"However, the hollow within does taper, growing larger at the top where the rooftop air conditioning equipment is located and blowing downward. Thus, where less support is needed, the hollow gets wider.

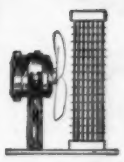
"Although the column sizes vary, a typical column is 26 in. wide by 36 in. deep."

THREE Redmond SALESMAKERS

1. Condenser Fan Replacement Motor

Your No. 1 Condenser Fan Motor for Replacement in the Air Conditioning and Refrigeration Fields.

Condenser Fan Motor 1½ Through 16 Watts.



Shorter Length Makes AM-4 COMPLETELY INTERCHANGEABLE

Stock one motor to accommodate all mountings

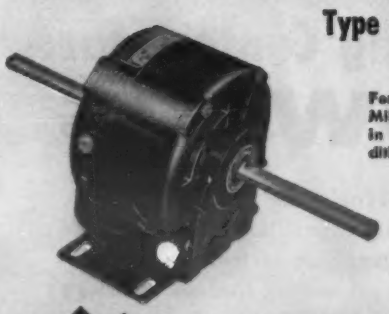
1. The AM-4 will replace all rear-mounting motors.

2. You can replace motors with peripheral mountings.

3. All-Angle Operation: designed for all-position mounting, vertical shaft up, shaft down, or any angle. Now you stock only one motor. The extra large oil reservoir is permanently sealed for lifetime lubrication—and guaranteed not to leak oil in use or shipment.

2. Air Conditioning Replacement Motors

Type AY for Room Air Conditioners 1/3 to 2 Horsepower



For Replacing the Millions of Motors in Unit Air Conditioners.

Now you need only one motor for both two-speed replacements and single-speed units. These motors are designed for easiest replacement—the resilient mounting bases raise the shaft to the desired levels, and the double-shaft extensions are long enough to cover all applications. With Redmond's "Quick Disconnects" you just put in the motor and then plug in the leads. The splash-proof construction protects the motor from condensate.

3. Kitchen Ventilator Fan Replacement Motor

Totally Enclosed TL-270

Now You Stock Only One Motor to Cash in on the Profitable Market for Kitchen Ventilator and Range Hood Motors.

Here is a motor designed specifically to meet the increasing demand for kitchen ventilator and range hood replacement motors. You can power all 8" and 10" blades with this totally enclosed MicroMotor and cash in on a profitable replacement market.

An outstanding feature of this fine motor is the totally enclosed case design which eliminates the possibility of dirt passing into the windings.

CC Redmond DISTRIBUTORS DIVISION REDMOND COMPANY, INC., OWOSSO, MICHIGAN

Seminars Explore Changing Trends In Air Conditioning, Refrigeration Field

PORTION of the more than 200 persons who attended the Kansas City, Mo. session of the education service meetings conducted under the auspices of Refrigeration Equipment Co., Kansas City, and Bendix-Westinghouse.

KANSAS CITY, Mo. — An analysis of changing trends in the air conditioning and refrigeration industry was the general theme of a series of well-attended educational service meetings conducted recently in nine Kansas and Missouri cities.

The seminars were jointly sponsored by Refrigeration Equipment Co. here and the Evansville Div. of Bendix-Westinghouse Automotive Air Brake Co.

In attendance at the sessions, which attracted over 600 persons, were contractors, engineers, servicemen, electricians, and individuals representing all segments of the industry.

Arrangements for the meetings were spearheaded by E. L. "Ernie" Tramposh, president of Refrigeration Equipment Co. Tramposh was assisted by Don Darnell, area representative for Bendix-Westinghouse.

Other Refrigeration Equipment Co. personnel who helped handle the meetings are Jed Yeager in Topeka, John McCullough in Wichita, and Warren Clark and Les Alber of the Kansas City office.

Sites of the Kansas gatherings were Topeka, Wichita, Salina, Colby, and Liberal. Host cities in the Show-me State were St. Joseph, Joplin, Columbia, and Kansas City.

Major points covered in the programs were: the basic construction of hermetic compressors, the proper methods for checking and replacing hermetic electrical accessories, interchangeability of compressors, refrigerant system clean-up procedures following a compressor burn-out, moisture problems, vacuum techniques, warranty warnings, and electronic leak detection.

Highlighting the meetings was a special educational slide film complete with color and sound which graphically depicted "An electrical exploration of motor compressors."

The film, along with others shown, enabled viewers to get a true-to-life picture of the ramifications involved in servicing the intricate mechanisms which supply power to the industry's products, it was pointed out.

Time was alloted at each meeting for the local chapter of RSES to present the advantages the organization offers its members as an educational and professional society.

RSES speakers emphasized the many opportunities for access to both product and service information which members gain through regular meetings and service publications.

Top honors for attendance went to the Kansas City meeting where over 200 persons gathered in the World War II Memorial building. Other cities with high registrations were Topeka, Wichita, St. Joseph, and Joplin.

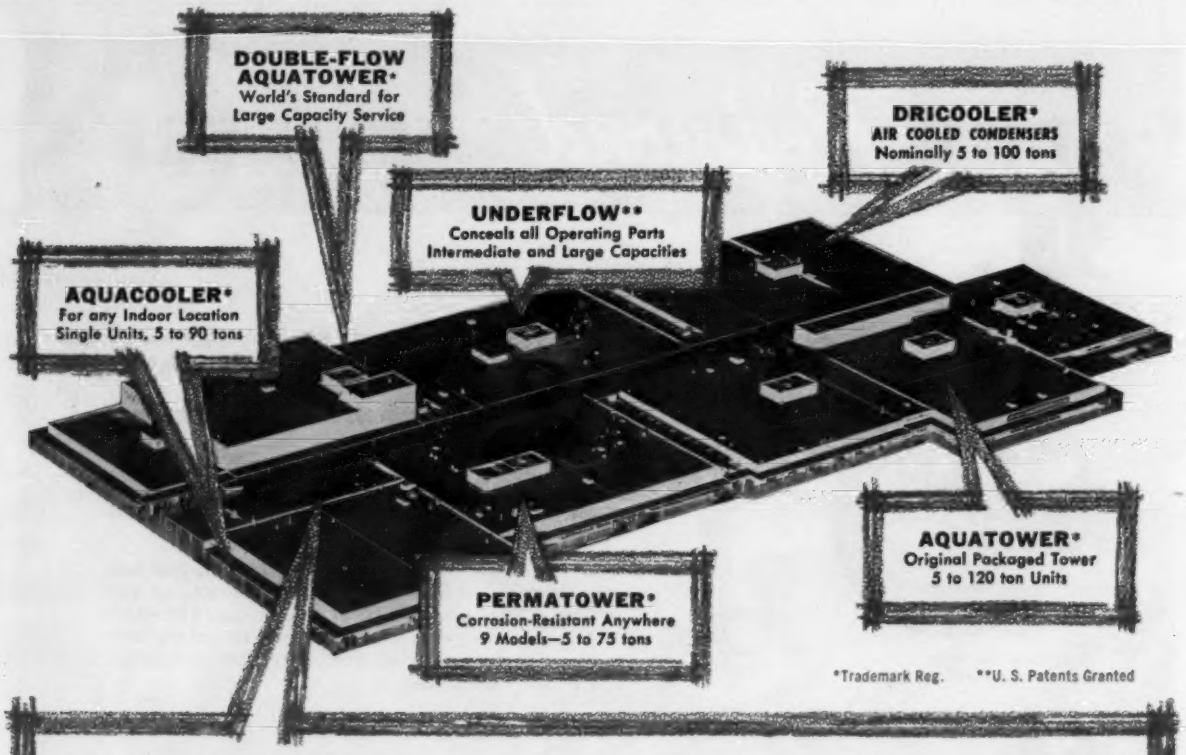
Programs in the nine cities were held in a 17-day period from March 28 to April 14.

Commenting on the success of the program and plans for its continuance on an annual basis, Ernie Tramposh pointed out that this was "just a step in a series of projected service meetings and clinics designed to better equip all levels of the industry for tomorrow's increasingly competitive markets."

McQuay Directors Declare Dividend

MINNEAPOLIS — Directors of McQuay, Inc. have declared the regular quarterly dividend of 12½ cents a share, according to B. E. James, president.

The dividend is payable July 1, 1960 to stockholders of record June 15, 1960. As of March 31, 1960 there were 386,836 shares of the company's common stock outstanding.



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Call MARLEY — and you're in touch with the world's largest "Shopping Center" for COOLING TOWERS

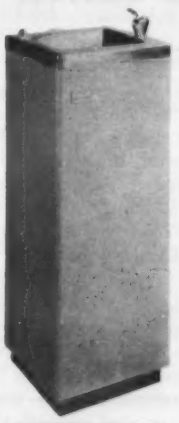
Many engineers and contractors look no further than the Marley Company in selecting cooling towers and air cooled refrigerant condensers. For Marley offers "one-stop shopping"—the world's most complete line, in which there's a tower pinpointed for every individual requirement. Performance-conscious professionals also recognize the superior performance of products that bear the Marley name and are backed by the company's single-responsibility guarantee.

In every cooling category, Marley makes the leading equipment. Where packaged cooling towers of modest capacity are indicated, there's the Marley Aquatower, performance-proved in tens of thousands of outdoor installations, and a Marley AquaCooler for indoor service. If corrosion is a special problem, Marley offers the popular Permatower line that makes liberal use of inert materials. If air is the logical cooling medium, Marley's newly-designed DriCoolers offer improvements not available elsewhere. And in the field of intermediate-capacity cooling, Marley's Double-Flow Aquatower and the patented Underflow are selected over all other makes in a substantial majority of cases.

From every standpoint—selection, performance, flexibility, economy, maintenance, durability—Marley products are ideally suited to all types of operations. For information on the complete line, call your nearby Marley Application Engineer, or write today for descriptive bulletins.

THE MARLEY COMPANY MARLEY KANSAS CITY, MISSOURI

WATER COOLER



10 GALLON PRESSURE TYPE

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- STAINLESS STEEL DRAIN TOP
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REMCOR Model CW-10A

Also 5 gallon Bottle Water Cooler—*$89.50

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321 EAST GRAND AVENUE,
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manufacturers of water coolers since 1940

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Michigan Builder Offers Air Conditioning As Standard Equipment In $14,990 Homes

By George M. Hanning

ANN ARBOR, Mich. — For the first time in Michigan, air conditioning is being offered as standard equipment in a subdivision house priced at less than $15,000, claims Robert Gutterman, president of Whittier Homes, Detroit.

Gutterman is currently building a 104-home subdivision on Ann Arbor's south side, offering one 950-sq. ft. model, complete with air conditioning at $14,990. A 1,000-sq. ft. model is offered at $15,990. Price remains the same whether or not the customer wants air conditioning.

The homes are being air conditioned with Fedders "Flexhermetic" 2-hp. units by King Cole Heating & Cooling Co., Detroit. Fedders furnaces are also used. Al Keats, president of King Cole, pointed out that the low price was made possible because he is able to offer the builder combined heating and cooling for less than ever attainable here before.

He specified that all houses with air conditioning are to have 3-in. insulation in the ceiling and 2 in. in the walls. They are also to have white reflective roofs.

Installation costs are cut to the minimum with the Fedders Flexhermetic unit, he noted. Condensing unit is mounted on a frame in the outside wall of the house, thus saving the cost of a slab.

Condensing unit is set in place and the cooling unit is mounted on top of the furnace. Eighteen feet of pre-charged, insulated tubing connect the two units. These are clamped to basement ceiling joists and the installation is complete. Ducts and fan are sized for cooling.

Keats commented that the installations and units conform to FHA and city standards.

Speculative air conditioned subdivisions have been tried in this area before with poor success. Why did Whittier decide to try the idea?

"The exceptional price was a major factor," Keats admitted. "However, he also needed something new with which to sell houses. He felt that air conditioning would be that something. Builders know that air conditioning is coming. Whittier felt that possibly this is the year."

However, with only a few days of hot weather since the model homes were opened to the public late last month, sales have been somewhat less than sensational.

Seven have been sold and deposits have been placed for 30 more. But prospects so far have been "thinking it over."

Keats reasons that Ann Arbor citizens are "small town people" rather than "big city" people. They are not rushed into buying by gimmicks. They take their time about deciding.

Gutterman, he said, is still very enthusiastic about air conditioning. The builder points out that these houses are selling better than his other low priced non-air conditioned houses. Many people are returning for their second and third look at them.

When they keep coming back, they are sold, he believes. They are just waiting for a final convincer. He expects a good hot spell to provide that convincer for many lookers.

"The difference will be whether sales are fair or fantastic," he indicates.

Keats said he got the idea for the promotion at the National Association of Home Builders convention last January.

He talked with Julius Cohen, Columbus, Ohio builder, who scored an amazing success with air conditioned homes last year.

After studying Cohen's operation, Keats decided to try it — with improvements — in the Detroit area. In addition to Whittier, he has another builder set to try the idea in the suburban area northeast of Detroit.

Between the two, Keats estimates, he will sell between 75 and 100 residential air conditioning units to tract builders this year — a good volume for the Detroit area.

AIR CONDITIONING at no extra cost is the major appeal in this advertisement of Whittier Homes, Detroit.

PROVEN BEST!

FOR ALL MAKES OF ICE MACHINES

VAPCO

ICE MACHINE CLEANER

The ORIGINAL LIQUID Ice Machine Cleaner. Works fast yet safely. Produces FRESH SMELLING flakes and cubes.

No danger from toxic residues because it's FOOD GRADE. Simple and safe to use with ANY machine.

1. Goes into solution quickly — even in COLD water.
2. No undissolved crystals left.
3. Removes more scale per ounce of cleaner.

Now, in Safe, Mailable 8 oz. Plastic Bottles and 280 lb. Drums.

Complete literature on request or see your dealer TODAY!

Vapco QUALITY PRODUCTS

GARMAN COMPANY ST. LOUIS 25, MO.

IN TUBING—Nothing Beats Copper!
IN COPPER—Nothing Beats READING!

For COPPER REFRIGERATION TUBE

Specify READING "LEKTROSEAL"®

Ideal in
- Refrigeration
- Air Conditioning
- Gauge Lines
- Bottled Gas Installations
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Features
- 99.90% Pure Deoxidized Copper.
- Thoroughly Dehydrated and Sealed at the Mill before Packaging.
- Immaculately Clean Inside Surface, thanks to Most Modern Production and Exhaustive Inspection.
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Send for Complete Catalog

For COPPER WATER TUBE
Specify READING "LEKTROSEAL"®

For COMMERCIAL COPPER TUBE (in Varied Shapes)
RED BRASS & COPPER PIPE
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For SMALL, SEAMLESS PRECISION COPPER TUBE
Specify MACKENZIE WALTON
Product of MACKENZIE WALTON CORP.*

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CLEVELAND, OHIO, 1562 E. 55th St.
NEW ORLEANS, LA., 1102 St. Thomas St.
DENVER, COLO., 2635 Walnut St.
DALLAS, TEXAS, 9000 Sovereign Row
HOUSTON, TEXAS, 1121 Rothwell St.
OAKLAND, CALIF., 410 Hegenberger Rd.
LOS ANGELES, CALIF., 120 No. Santa Fe Ave.

COMPLETELY INTEGRATED QUALITY CONTROL, FROM OUR OWN REFINERY TO OUR OWN DISTRIBUTION DEPOTS

Inside Dope

By GEORGE F. TAUBENECK

(Continued from Page 1)

Column," which has been resurrected and reprinted by Harvard University Press.

The author was Ignatius Donnelly. (More about him later.) Donnelly's vision included television:

" . . . I touched the knob corresponding with the name of the new state of Uganda, in Africa, and immediately there appeared in the mirror all the doings of the people of that state—its crimes, its accidents, its business, the output of its mines, the sayings and doings of its prominent men. . . ."

" . . . I touched the button for another African state, Nyanza; and at once I began to read of new lines of railroads; of large colonies settling upon the higher lands of the interior; of their colleges, books, newspapers; and particularly of a dissertation upon the greatness of Chaucer, written by a Zulu professor, which has created considerable interest among the learned societies of the Transvaal."

He foresaw airships which would make the journey from New York to London in the "miraculous time of 36 hours," and he had a most ingenious approach to air conditioning.

Ignatius Air Conditioning

"I had observed that the air of the hotel was sweeter, purer, and cooler than that of the streets outside. I asked one of the attendants for an explanation.

"He took me out to where we could command a view of the whole building, and showed me a great canvas pipe rose high above the hotel, and tracing it upwards, far as the eye could reach, he pointed out a balloon, anchored by cables, so high as to be dwarfed to a mere speck against the face of the blue sky.

"He told me that the great pipe was double; that through one division rose the hot, exhausted air of the hotel, and that the powerful draft so created operated machinery which pumped down the pure, sweet air from a higher region, several miles above the earth; and, the current once established, the weight of the colder atmosphere kept up the movement, and the air was then distributed by pipes to every part of the hotel."

Prophet Donnelly foresaw shopping centers, and the practice of blocking off downtown streets for use as pedestrian malls.

His 1888 book of prophecy is climaxed by a world war holocaust in which three fourth of the human race is obliterated.

" . . . Civility, culture, have disappeared. There are no newspapers, no books, no schools, no teachers. The next generation will be simply barbarians, possessing only a few dim legends of the refinement and wonderful powers of their ancestors."

Ignatz and Dope

As a boy in Marshall, Illinois, "Dope" suffered sympathetically with a cousin named Ignatius Donnelly Taubeneck.

This cousin survived that horrible handicap (everybody nicknamed him "Ignatz") and hied onward to an illustrious career as a Professor of Speech and Government in institutions of higher learning in the states of Illinois and New York.

Currently I. D. Taubeneck 'nobody calls him "Ignatz" now) is lecturing in the Far East under the auspices of the U.S. Department of State.

This book reveals—at long last—where and why cousin I.D. got his awkward monicker. Seems that Ignatius Donnelly and I. D.'s father (a Congressman from Illinois) were in political cahoots.

Out of Our Mailbag

Philco Corp.
Connersville, Ind.

Editor:

I always read your column, "Inside Dope." While reading a piece called "Verse of the Week," it brought to mind a verse that my employer recited to me the other day. I think your readers would enjoy it, so here it is:

Twas midnight on the ocean
Not a streetcar was in sight,
The sun and moon shone brightly
For it rained all day that night.

Twas a summer day in winter
And the snowflakes fell like glass,
And all the fishes in the trees
Huddled in their nests.

While the organ peepled potatoes
Lard was rendered by the choir,
And as the sexton rang the
dishrag
Someone set the church on fire.

"Holy smokes," the sexton
shouted
And in the rain he lost his hair,
Now his head resembles Heaven
For there is no parting there.

FLOYD R. POWELL

Stories of the Week

Junior High lad dashed home from a Little League diamond, gulped down his dinner, and tore upstairs to dress for his first formal date.

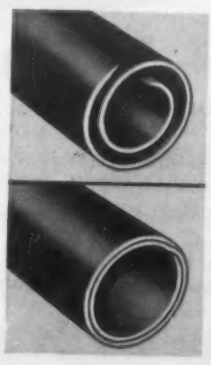
"Junior," trilled his mother, "be sure to take a bath."

"Haven't time," he panted. "Gotta be there in 15 minutes, and first you have to teach me how to dance."

Friend in Havana sends us this anecdote:

"Fidel Castro, Raul Castro, and Che Guevara were sailing together on a boat in the Caribbean.

There's almost no limit to the things Bundy can mass-fabricate



Bundyweld is the original tubing double-walled from a single copper-plated *steel* strip, metallurgically bonded through 360° of wall contact for amazing strength, versatility.

Bundyweld is lightweight, uniformly smooth, easily fabricated. It's remarkably resistant to vibration fatigue; has unusually high bursting strength. Sizes up to ⅝" O.D.

Experience makes the difference! Whatever your tubing problem, Bundy has the "know how" to mass-fabricate the shape you need.

Bundy engineers, working with you, may be able to suggest design modifications to cut fabrication costs. Then your design will be turned over to Bundy specialists who can mass-fabricate your tubing component at low unit cost with Bundyweld®.

Bundyweld is the original steel tubing that's *double-walled* from a single steel strip for extra strength and resistance to vibration fatigue. It's the safety standard of the refrigeration industry. Bundyweld is covered by ASTM-254 and Govt. Spec. MIL-T-3520, Type III.

Got a tubing problem? Bring it to Bundy. Call, write, or wire: Bundy Tubing Company, Detroit 14, Michigan.

WORLD'S LARGEST PRODUCER OF REFRIGERATION TUBING

The boat sank. Who was saved?

The answer: "Cuba was saved!"

Fine-feathered friends surveyed Madame Sparrow's neat new nest.

"Love it, just love it," congratulated Madame Starling, "but why that big hole in the bottom?"

"So practical, my dear," elucidated the lady bird. "Laying eggs I enjoy. But I simply can't put up with children."

"I'm the happiest man alive, I've got the finest wife in the country."

"Yeah, that does make a man happy—having his wife in the country."

Summer Is Here

Help Wanted: Millions of people seek two weeks of hard outdoor labor, 12 to 16 hours per day. Experience helpful but not necessary. Crowded working conditions; intense sunshine, sweltering temperatures, rain, gales, etc. Many hazards involved. No time off for meals or coffee breaks. No wages or salary. Applicants must agree to pay all expenses. No others need apply.

What is this? A slave labor job in Siberia? No. Commonly it's called a vacation.

It's a fact that many a statement beginning with "it's a fact" isn't.

The American Public really isn't concerned about atomic fall-out, because so far it has not affected television reception.

Quotes of the Week

If a person desires to be a humorist it is necessary that the people around him shall be at least as wise as he is, otherwise his humor will not be comprehended.—THAD STEPHENS.

A gossip is a person who creates the smoke in which other people assume there's fire.—DAN REVELLO.

Dr. Richard H. Overholt, witness in damage suit against a cigaret company by a patient claiming he lost a lung by smoking the company's brand: "It is difficult to prove because we're having a difficult time getting a mouse to smoke like a man."

The tree of liberty must be refreshed from time to time with the blood of tyrants. It is its natural manure.—THOMAS JEFFERSON.

Last Laughs

Two U.S.A. hometowners met unexpectedly in Paris. After embracing fondly they gabbed about their experiences.

"Believe it or not," interjected Mehitabel, "I haven't been to the Louvre yet."

"Ah, don't worry," cheered-up hometowner No. 2. "Probably all that rich food."

City relative, a theatrical booking agent, visited farmer Brown on a summer weekend. Discovered a talking pig on the premises.

"Why haven't you told me about this extraordinary pig?" demanded Mr. Cityfeller.

"I was hoping," Brown sheepished, "that the little feller would outgrow it."

Having heard that a Sydney hostelry endeavored to serve any delectable which could be obtained in the entire British Empire, Phil O'Connell (Bundy Tubing) ordered elephant steak.

"Yes, sir," the waiter imperturbed. "African or Indian elephant."

It seems Americans aren't alone in their reluctance to attend church early on Sunday morning.

Few people had been showing up at 8 a.m. service in little Exning, England. So the Rev. Robert Henry Craig did something about it.

On a recent Sunday, he drove through every street in the village with his thumb on his automobile horn button, thus abruptly awakening the 3,800 inhabitants with persistent honking.

Quite a few extras came to church. It's also possible that this early awakening of hundreds of families helped *create* a number of future parishioners.

Future Tycoons

Love this reverse-twist on an old come-on selling gimmick. In San Diego two college boys attempted to exchange 48 paper napkins for a $1,200 used car.

Seems an "'Honest John" type of dealer had distributed these napkins around cocktail lounges.

Each napkin was imprinted with his name, the address of his used-car lot, and the legend: "This napkin good for $25 toward purchase of any auto on my lot."

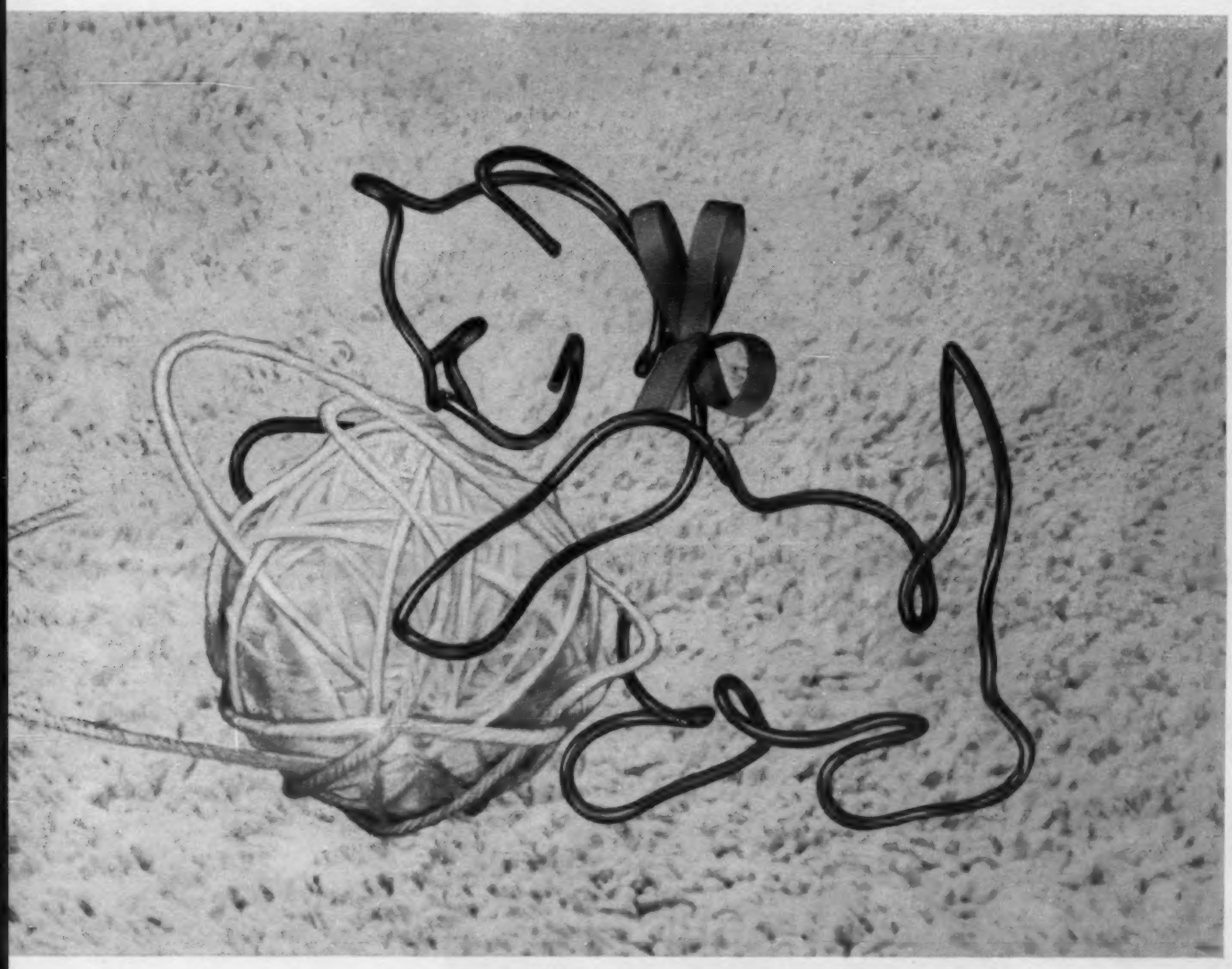
Turned out it was a "legend," indeed. The dealer wouldn't pay off—so the quick lads sued him. Can't wait to learn how this comes out.

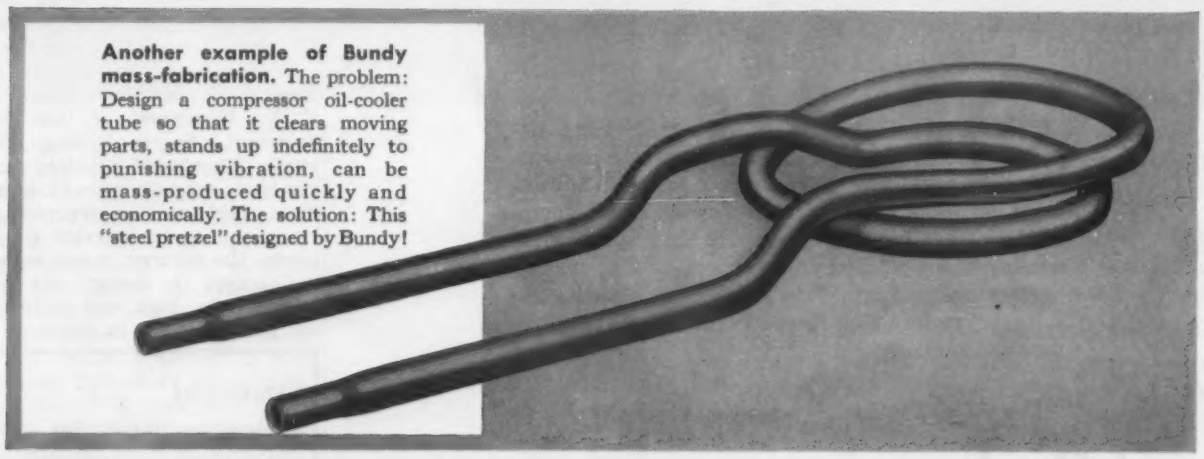
Afterburners

An old-timer is a man who can remember when church collection plates took most of the money golf courses now get on Sundays.

Inflation is a state of affairs when you never had it so good or parted with it so fast.

Middle-ager remembers when a woman who had equal rights didn't think she was underprivileged.





Another example of Bundy mass-fabrication. The problem: Design a compressor oil-cooler tube so that it clears moving parts, stands up indefinitely to punishing vibration, can be mass-produced quickly and economically. The solution: This "steel pretzel" designed by Bundy!

There's no substitute for the original

BUNDYWELD® TUBING

WORLD'S LARGEST PRODUCER OF SMALL-DIAMETER TUBING • AFFILIATED PLANTS IN AUSTRALIA, BRAZIL, ENGLAND, FRANCE, GERMANY, AND ITALY

BUNDY TUBING COMPANY • DETROIT 14, MICH. • WINCHESTER, KY. • HOMETOWN, PA.

NAPRE Olympian Chapter Hosts 11th Convention of Western RSES, ARW

OLYMPIA, Wash.—The 11th annual educational conference of Western International Association of the Refrigeration Service Engineers Society was held recently in the Hotel Olympian here.

The Air-Conditioning Refrigeration Wholesalers of the Pacific Northwest held their meeting, then enjoyed the RSES program.

With the Olympia Chapter of the National Association of Practical Refrigerating Engineers as hosts, many of those attending the conference visited the refrigeration machine room and other parts of the Olympia Brewing Co.

One of the speakers, Sam Kramer of Seattle, sales engineer for W. E. Stone & Co., presented a talk on the subject of "Care and Handling of Frozen Foods."

Other speakers and their topics:

"Heat Pumps, Reversing Valves, and De-icer Controls," Mel Canion of Los Angeles, representing Frank G. Slagel Co., manufacturer's representative for Ranco controls; "Electronic Leak Detector," E. O. Trapp, General Electric Co.; "Explanation of Electric Motors," Asa M. Elkins, manager of sales distributors division of Redmond Co., Inc.

Also, "Low Temperature Refrigeration," Ted R. Brown of Salt Lake City, president of Refrigeration Distributors Corp.; "Service Pointers," premiere showing of an addition to the RSES service manual, presented by Samuel N. Seely, manager of the western district for Du Pont's Freon Products Div.; "Heat Rejection," Bob Fleming, northwest district manager for Recold Corp.

Another event was a tube bending, flaring, and soldering contest, which was conducted by Edward J. Arthur, northwest sales manager for Mueller Brass Co.

American Potash Names New Refrigerant Rep.

LOS ANGELES — American Potash & Chemical Corp. here has appointed Mareco, Inc., Adrian, Mich., as representative for refrigerant chemicals in a territory comprised of Michigan, Ohio, Kentucky, West Virginia, and western Pennsylvania, according to W. E. Horn, AP&CC manager of refrigerant chemicals sales.

Motor Switch Repair Kit

With Only 11 Basic Switches, Kit Makes Up 130 Most Needed for Appliance Motors

GENERAL ELECTRIC service specialist K. D. Blumhardt works with appliance motor switch repair kit he designed.

KIT, NOW AVAILABLE from General Electric, stands only 4 in. high and is 10 by 10 in. square. It may be used to service almost any type appliance motor.

Ideas from Field Men Help In Kit Design

SCHENECTADY, N. Y.—An appliance motor switch repair kit, designed to handle servicing of almost all appliance motors, has been introduced by General Electric Co.

The kit contains only 11 basic switches plus hardware and tools needed to make up the 130 switches needed most to service appliance motors, it was stated.

It is expected to reduce the servicing headache and inventory costs of carrying many different switches in stock, according to engineers at General Electric's Appliance Motor Dept.

Design of the kit is based on results of an intensive study by K. D. Blumhardt of that department. In conducting the study, Blumhardt solicited and received suggestions and ideas from field service representatives and motor service shops across the country, it was noted.

Compact in design, the kit stands 4 in. high and is 10 in. by 10 in. square in shape.

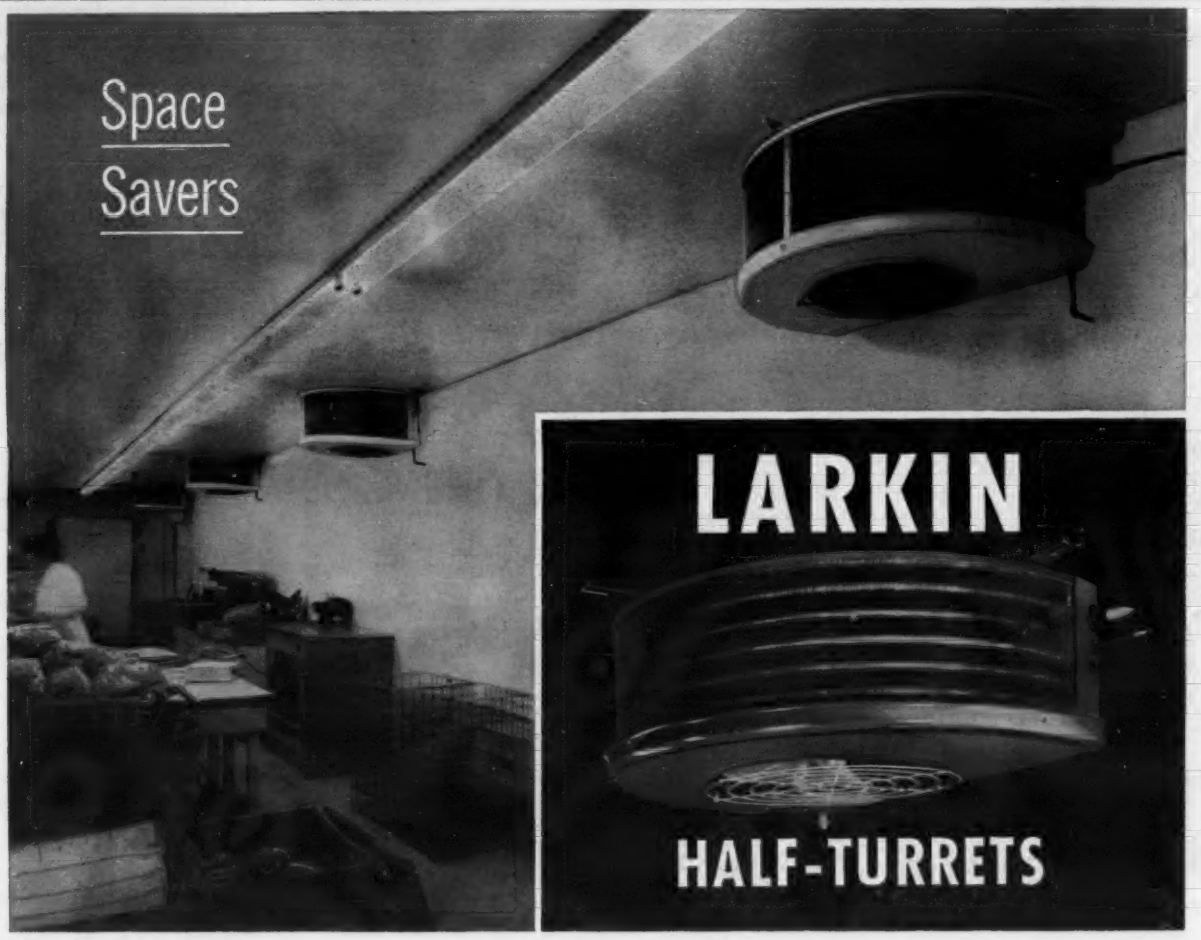
Thinking of—

- **changing territories**
- **expanding your territory**
- **taking on new lines—**

Check the

CLASSIFIED ADS

Your opportunity may be there.



Ideal for Meat-Cutting Rooms

FEATURES THAT SELL

- Original, patented Larkin Cross-Fin Coil with staggered electro-tinned copper tubing and aluminum fins.
- Light-weight, rust-proof aluminum case finished in Larkin blue or gleaming white.
- Built-in heat exchanger.
- Permanently lubricated motors, resilient mounted, with thermal overload protection.
- Hinged drain pan for easy access to coil.
- Airplane-type, vibration-proof fastenings.
- Mounting brackets, slotted for easy installation.
- Fully insulated drain pan.

Modern supermarkets with self-service meat departments require properly refrigerated meat cutting and packaging rooms. Since space is always at a premium, Larkin Half-Turret Humi-Temps win applause for their ability to save space without sacrificing efficiency.

Here again, Larkin has chalked up amazing results in maintaining properly balanced temperature and humidity.

See your wholesaler or write for Bulletin 1049B.

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ATLANTA 1, GEORGIA

for lasting winter comfort
in basementless homes...

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J-LINE

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GAS-FIRED
COUNTER-FLOW
FURNACES

Presenting new . . .

J-LINE
COUNTER-FLOW FURNACES

PEAK PERFORMANCE
COMPETITIVELY PRICED

NOW . . . every home can afford true, quality heating equipment! The new J-Line models are designed to a new concept in performance and value. This is made possible through savings in modern design (no fancy decorations), and high production tooling . . . at no sacrifice in quality.

The new J-Line has the many exclusive features and complaint-free engineering that have made the Janitrol name famous for over 50 years. Compare the features . . . compare the price. You'll find the J-Line has advantages not even offered in higher priced lines.

J-line furnaces are available in both counter-flow or upflow models. For extra air delivery, belt drive blowers may be ordered. Sizes from 65,000 to 120,000 Btu/hr. meet most requirements for new homes, apartments or modernization.

THESE EXTRA QUALITY FEATURES ARE STANDARD!

Multi-Thermex Heat Exchanger—the famous Janitrol design that produces maximum heat transfer and tight-fisted fuel economy.

Ribbon-flame Burners—produce clean, sharp intense heat . . . burn with unusual quietness.

Two-pass air flow—a unique internal design that directs the air over the heat exchanger twice, for extra heating efficiency.

Trim Styling—crisp, modern cabinet design in warm two-tone colors that add richness to any home.

Compact, Space-Saving—requires less than four square feet of floor space.

Quiet—blowers are dynamically balanced and rubber-cushion supported for quiet air delivery.

Unidrive Blower—full capacity air delivery with lower power consumption—saves at least $5.00 per year.

5-Year Lubricated Bearings—on blower motor save on maintenance.

Precision Controls—sensitive thermostat, pilot and operating controls are enclosed and protected from dirt.

Factory Fire-Tested—all models are wired, fired and checked at the factory under operating conditions.

WIRE COLLECT FOR FACTS

You owe it to yourself to get the full story on the amazing new J-Line—plus the fabulous Janitrol SELECT DEALER PROGRAM. This exclusive program gives you *action* in place of promises!

CALL WESTERN UNION NOW! ADDRESS YOUR COLLECT WIRE TO:

HARRY C. GURNEY, General Sales Manager
Janitrol Heating and Air Conditioning
A Division of Midland-Ross Corporation, Columbus 16, Ohio

Just say: "Rush me full details on the new J-Line and the Janitrol Select Dealer Program."

The Profit Parade in the '60's will be lead by Janitrol Select Dealers

JANITROL HEATING
& AIR CONDITIONING
A Division of Midland-Ross Corporation
Columbus 16, Ohio

Trade Opportunities In France, Italy, Iraq, Iran, and Germany Listed by BDSA

WASHINGTON, D. C. — The Business & Defense Services Administration recently listed export trade opportunities in France, Italy, Iraq, Iran, and Germany.

Ets. A. L. Terrat, 89 Avenue du General Leclerc, Chalette, France, which manufactures general mechanical equipment, refrigeration units, and motors for motorcycles, seeks a joint venture or outright sale of plant. The plant covers 6,500 square meters and is valued at approximately $140,000.

Also in France, Etablissements A. Moreau, wholesaler, retailer, and selling agent, is interested in direct purchase and agency for air conditioning equipment—individual units and generators. The firm's address is 9 Cours Bosquet, Chemin du Loup, Pau, Basses-Pyrennes, France.

Air conditioners are also desired by Kerotherm, S.p.A., importing distributor 4 Piazza Castello, Milan, Italy. Other export opportunities were given as follows:

Tawfik Allawy, importer, wholesaler, and retailer, Saadoun St., P.O. Box 105, Baghdad, Iraq—refrigerators and evaporative air coolers; Wilhelm Lison KG, commission merchant, 9 Werftstrasse, Gelsenkirchen, Germany — electrical appliances including refrigerators, ranges, and washing machines; Kavesh Trading Co., importing distributor and manufacturer's representative, Avenue Saadi, Fiat Building, Tehran, Iran — agency sought on an exclusive basis for electrical household appliances.

Cincinnati Sub Zero Forms Export Office

CINCINNATI — A separate office to handle foreign sales and export operations has been established at 224 E. Eighth St. here by Cincinnati Sub Zero Products, according to R. J. Jacobson, president.

H. E. Schurgast, who has worked almost exclusively in foreign trade since the close of World War I, has been appointed export manager.

The company manufactures low temperature production chilling and environmental testing chambers for use in metalworking, research, medicine, agriculture, and many other fields.

"During its 20 years of business," the announcement said, "Cincinnati Sub Zero Products has exported many chambers to Canada, Europe, and South American countries.

TWO EXECUTIVES OF A Swedish air conditioning and heating firm discuss American manufacturing and selling techniques with a Mueller Climatrol executive and customer at Mueller's plant in Milwaukee. Pictured (left to right) are: Robert P. Johnsen, president of Atomatic Heating & Air Conditioning Co. of Chicago; Ivar Dybeck, production manager of Ab Bahco fan works in Enkoping, Sweden; Curt E. Hoerig, vice president of manufacturing, Mueller Climatrol; and Ulf A. Styren, technical director of Ab Bahco, Stockholm. Robert P. Johnsen, a Mueller Climatrol customer in Chicago, met several technicians from the Ab Bahco company on a recent trip to Denmark. Johnsen extended them an invitation, which was later answered by Styren and Dybeck, and he escorted them to the Milwaukee plant.

Report To Cover 5 European Fairs

STUTTGART, Germany—Detailed reports of refrigeration and air conditioning machines exhibited at five European trade fairs this spring will be published in the July "Die Kaelte."

He said the illustrated reports will cover fairs in Hannover, Milan, Basel, and Cologne. The 60-page report may be ordered in advance directly to Die Kaelte before July 15. Price is 12 Deutche marks (currently $2.88) including postage.

Kelvinator Licenses Japanese Firm To Make Compressors

DETROIT — A licensing agreement between Matsushita Electric Industrial Co., Ltd., of Osaka, Japan, and Kelvinator International Corp., a subsidiary of American Motors Corp., has been officially validated by the Japanese Government and will become effective immediately, it was announced jointly in Osaka and Detroit.

Under terms of the licensing agreement, Matsushita will build Kelvinator-designed compressor assemblies for incorporation in its own brand of household refrigerators, and will also build complete Kelvinator and Leonard brand household refrigerators for distribution in Asian markets.

Kelvinator will provide compressor design information and technical assistance, and distribution facilities in Southeast Asia for Kelvinator and Leonard refrigerators manufactured by Matsushita.

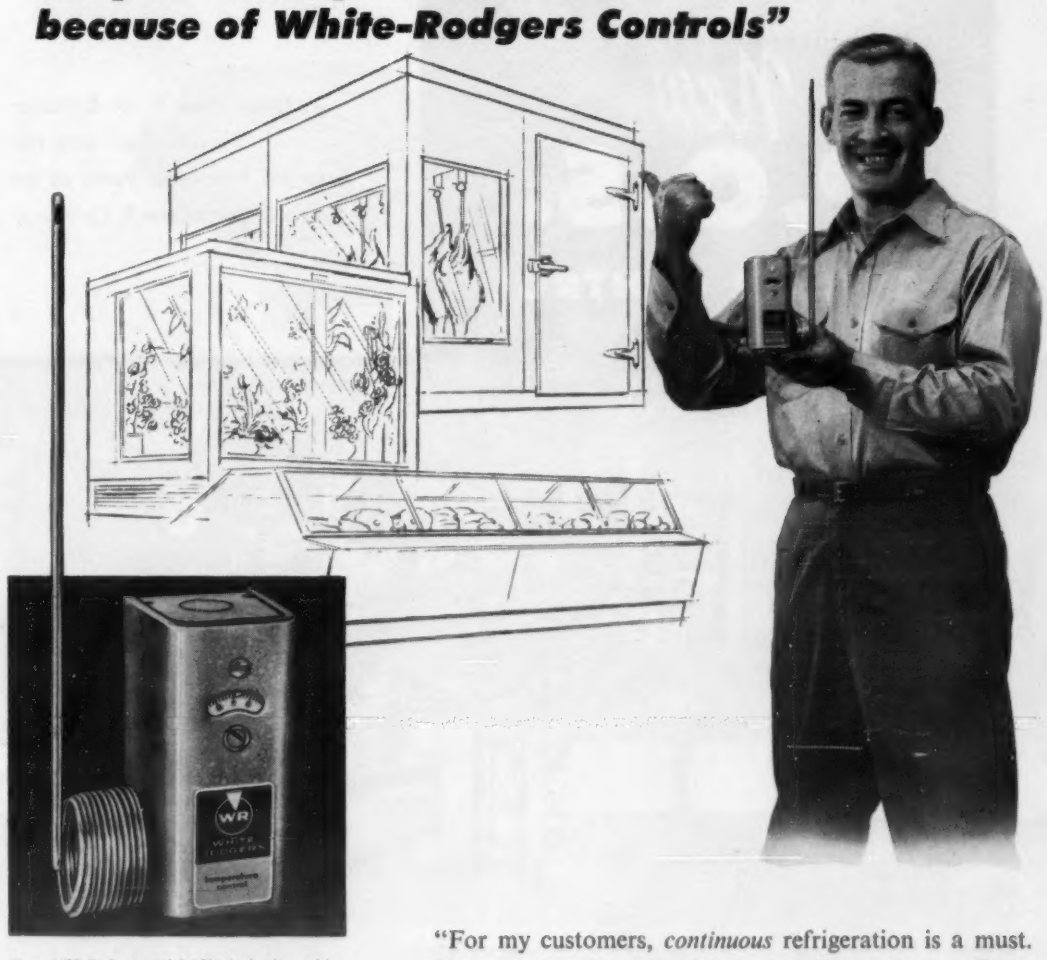
E. H. Wilcox, vice president of Kelvinator International, said Japanese-built Kelvinators designed to meet the particular requirements of the area, should increase Kelvinator's market penetration in southeastern Asia, and should permit savings in freight and other costs.

Wilcox said the agreement also gives Kelvinator the opportunity for increased brand-penetration of the large Japanese home market. Volume to date has been limited by import restrictions, he said.

"The potential for expansion of the Japanese market is second only to that of some parts of Europe," Wilcox said. "Industry refrigerator sales are in the area of 600,000 units this year, and should double that total within the next three years."

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

"They're strictly trouble-free . . . because of White-Rodgers Controls"



Type 1609-31 has special 15½ inch air-sensitive bulb to give quick and accurate response to slightest temperature change. Range −20 to +50° F., Adj. Diff. 3 to 25°, 5 ft. capillary. Other types available to cover ranges from −20 to +75° F. with capillary lengths up to 20 ft.

Write for catalog.

"For my customers, *continuous* refrigeration is a must. You can bet I use White-Rodgers controls on all my installations. Even on the toughest applications, I know I'm set—because White-Rodgers quality pays off in *trouble-free* system operation!"

For control of quick freeze cabinets, fruit storage, farm freezers, walk-in boxes, floral, meat and vegetable display cases, blood banks . . . wherever "trouble" means "loss" . . . smart servicemen refuse to take risks. They rely on White-Rodgers exclusive Hydraulic-Action controls.

WHITE-RODGERS

ST. LOUIS 6, MISSOURI TORONTO 8, CANADA

221

Air Conditioning a Drug Plant

Research, Production, Administration Bldgs. At Riker Laboratories Get Special Designing

RIKER LABORATORIES, a subsidiary of Rexall Drug & Chemical Co., uses two outdoor Trane Hermetic CenTraVac water chillers to cool its new, completely air conditioned 80,000-sq. ft. plant at Northridge, Calif. All air conditioning requirements of the research, manufacturing and administration wings are met by the CenTraVac chilled water system.

NORTHRIDGE, Calif. — Specific requirements had to be met in designing air conditioning systems to serve the three main buildings of Riker Laboratories, Inc. here, a wholly-owned subsidiary of Rexall Drug & Chemical Co.

The three main buildings devoted to research, administration, and manufacturing of Riker Laboratories are of windowless, tilt-up concrete design — done to facilitate constant conditions of heat, light, and humidity.

Each is a single-story building with 72-ft. width clear-span construction. They have independent ceilings with a 6-ft. service area above. Interior partitions are readily movable and unitized for easy reassembly.

In the aerosol and tableting departments of the manufacturing building, it was necessary to obtain close control of humidity to prevent moisture damage to products. In the tableting department especially, humidity control is essential.

Humidity above 40% causes a change in the flow characteristics of the raw materials, and increases difficulty in tablet pressing.

The research building combines chemical operations and pharmacology experiments with live animals. The odors produced in the animal room required 100% outdoor ventilation air, and at the same time, temperature control had to be maintained.

Mice, rats, rabbits, and guinea pigs are especially sensitive to fluctuating temperature. It was necessary to maintain close control, not only for experimental reasons, but for the general well-being of the animals.

Finally, in order to achieve maximum employe efficiency, it was necessary to keep conditions at the maximum comfort level.

The three buildings were divided into 11 air conditioning zones. These are served from five equipment rooms. The equipment rooms are located over employe washrooms.

It was found that a ceiling height of 7½ ft. in these washrooms was sufficient, so the space above was considered as an ideal place for air handling equipment, hot water system, and controls.

The roofs of the equipment rooms are of corrugated steel and are easily removed for adding or extracting large equipment. They extend only a few inches above normal roof lines to facilitate drainage.

The owner felt the elimination of penthouses improved the appearance of the buildings, and the integral equipment rooms were less expensive to build, it was pointed out.

Steam and chilled water lines come into the equipment rooms from a central maintenance building at equipment level, thereby simplifying piping that otherwise could be complicated by penthouses.

Air handling units in the equipment rooms consist of five Trane "Climate Changers" and three Trane multi-zone Climate Changers. The units range from 5,000 to 16,900 c.f.m. capacity.

Twenty-five thousand pounds of steam per hour and 450 tons of refrigeration are available from the maintenance building at the center of the plot plan.

Refrigeration is provided by two 200-hp. Trane hermetic "CenTraVacs." These units are located outdoors adjacent to the maintenance building, eliminating the need for additional building space and realizing a substantial cost saving, according to Trane.

"Either of the CenTraVacs will handle the processing or air conditioning load supplying 28° F. chilled water with non-freeze additives," Trane said. "In case of necessary shutdown of one of the refrigeration machines, the other machine can be temporarily switched over to handle the complete load.

Dual Towers, Boilers, Pumps Utilized

"There is also duplication in cooling towers, boilers, and pumps. Dual units were utilized primarily because of the necessity of keeping the animal rooms at a constant temperature at all times."

There are two independent air conditioning systems in the research building. One system serves the south half of the building which houses the medicinal chemistry and analytical laboratories. The second system serves the north half, which includes the pharmacology department and the animal rooms.

A multi-zone unit serves each half of the building, and each half is divided into two zones. Air is returned from each zone, except the animal rooms, by a return air plenum above the luminous ceiling.

The animal rooms are completely enclosed and have only inlet diffusers in common with the system. A separate exhaust system to the outside provides

ALCO'S New P.O.S.
CHILLER CONTROL
THERMO® EXPANSION VALVE

Alco's New P. O. S. Valve is engineered with the Solenoid Pilot Stop Valve as an integral part of the P. O. Valve.

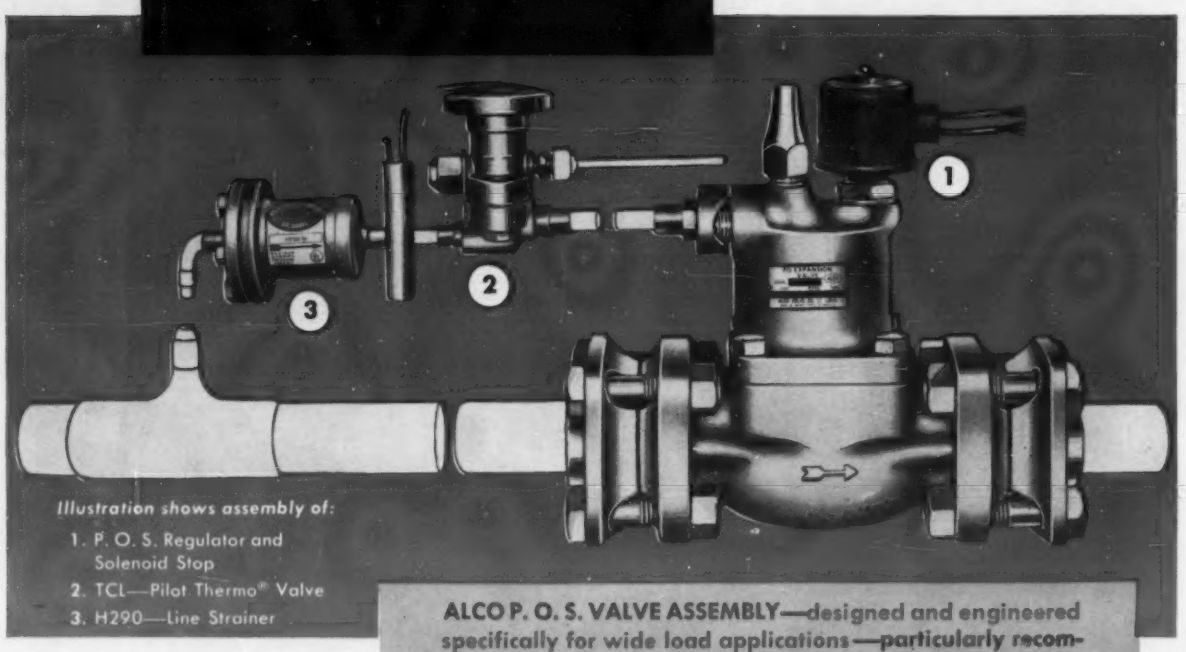


Illustration shows assembly of:
1. P. O. S. Regulator and Solenoid Stop
2. TCL—Pilot Thermo® Valve
3. H290—Line Strainer

ALCO P. O. S. VALVE ASSEMBLY—designed and engineered specifically for wide load applications—particularly recommended for refrigeration systems having capacity reduction—the ALCO SOLENOID PILOT STOP VALVE insures positive liquid "Shut-off."

ALCO PILOT OPERATED THERMO EXPANSION VALVES—give a positive control to 15% of nominal capacity with minimum superheat.

ALCO LIQUID LINE STRAINERS—insure positive protection of working parts from solder and dirt.

Capacities: 20 to 200 tons
Refrigerants 12 and 22

For Specifications—
Call your Alco Wholesaler, or write

• *BUY SECURITY*
• *BUY QUALITY*
• *BUY ALCO*

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853 KINGSLAND AVE. • ST. LOUIS 5, MO.

8220

The one complete line of refrigerant controls: Thermostatic Expansion Valves • Refrigerant Distributors Solenoid Valves • Suction Line Regulators • Flooded Evaporator Controls and Reversing Valves

100 per cent air change.

A system similar to the animal room system is also used in the aerosol filling department of the manufacturing building.

All systems in all buildings are pneumatically controlled. The owner feels the advantages of this type of control lie in the use of diaphragm actuated valves that can be modulated and through the use of slow-acting pneumatic relays, changing requirements are compensated for gradually, it was explained.

In all air handling units an electro-pneumatic valve, energized from the loadside of the supply fan, places the control system in operation.

Control of Multizone Units Described

Control of the multi-zone units was described as follows:

"In the hot plenum control, a submaster thermostat with remote bulb located in the hot plenum, modulates through a reverse acting relay, a normally closed steam supply valve in the line to the heating coils.

"A master thermostat with remote bulb located in the outside air, resets the submaster relative to outside air temperature, e.g., 35° F. outside sets the hot plenum for 110° F., and at 70° F. outside, the hot plenum is set for 70° F.

"The cold plenum control uses a direct acting thermostat, with remote bulb located in the cold plenum, which modulates a three-way chilled water valve in the cooling line to maintain the desired cold plenum temperature.

Zone Control In Research Building

"Zone control in the research building is maintained through a gradual direct acting room thermostat which modulates, through a positive acting valve, zone mixing dampers to maintain room temperature.

"A low limit thermostat, with its sensing element located in the zone supply air duct, will overcall the room thermostat to maintain a minimum supply temperature of 60° F. If the outside temperature rises, a master thermostat will trip a positive acting pilot valve, to render the low limit thermostat inoperative.

"Zone control in the south two-thirds of the administration building is achieved by a gradual, direct acting room thermostat which modulates, by means of a diaphragm type damper motor, zone mixing dampers to maintain room temperature.

"Each of the Climate Changers which serve the remainder of the administration building, cafeteria, and manufacturing building, is controlled by a gradual direct acting thermostat.

"It modulates in sequence, a three-way chilled water valve in the line to the cooling coil and a normally closed steam valve in the heating coil line, to maintain desired room temperature. It also actuates a normally open pneumatic electric switch to start and stop the chilled water pump.

"A radiant floor slab in all building areas carries the major portion of the heating load. Climate Changer heating coils, which respond more quickly, handle sudden outdoor temperature drops."

Riker Laboratories' air conditioning system was designed by Mechanical Associates of Alhambra, Calif.

Berkshire Tool Cools Office, Shop Areas

SPRINGFIELD, Mass.—Berkshire Tool Co.'s new 15,000-sq. ft. plant in Apremont Way, Westfield, features air conditioning in both the shop area and the offices.

Business offices, inspection rooms, and shipping rooms are located at the north end of the building, while the shop section is separate to provide a more efficient operation. The company, which makes aircraft and missile components, will have a work force of about 60 at the new plant.

'Unique In Textile Industry'

Complete Air Conditioning Is Featured In All Areas of Both Haines Hosiery Mills

HARRISON, N. J. — Hanes Hosiery Mills has further expanded operations by the construction of its new Weeks Div. plant near Winston-Salem, N. C. Among the main features of this modern plant are the three Worthington centrifugal refrigeration compressors producing 3,300 tons of air conditioning says Worthington Corp.

This is the second Worthington installation for Hanes—the present operation in Winston-Salem is cooled by 2,600 tons of air conditioning.

"Hanes, the largest manufacturer of seamless hosiery in the world, will be the hosts to what is probably the largest air conditioning installation in a textile manufacturing concern in the south," the announcement said. "Hanes is using the air conditioning for both optimum manufacturing conditions and the comfort of their employes.

"The installations of both of Hanes' plants are unique in the textile industry because of the fact that all areas, including the boarding, pre-boarding processes, and dye houses are completely air conditioned."

All of the installations were designed by P. L. Davidson and John deB. Shepard of Greensboro, N. C., consulting engineers. The Bahnson Co. of Winston-Salem, contractor for the original Worthington system, will install the new units.

In the Graphic Arts

Press Room Gets Air Conditioning

BALTIMORE—Air conditioning and humidity control equipment has been installed in the recently-enlarged press room of A. Hoen & Co., Inc., lithographing and printing firm, to permit a uniform stock supply to the presses.

A humidity increase from 55 to 80% will result in a quarter-inch variation on 76-in. stock, it was pointed out. The press room operates on a 24-hour, seven-day week basis.

Plant, Office Cooled

MILWAUKEE — Air conditioning will be among features of a new plant and office to be built for Graphic Enterprises of Milwaukee, Inc., a specialty printing firm.

Husky fittings mean compact transportation, too!

Whether by automobile or movement of gases and liquids by pipeline, today's trend in transportation is toward efficiency and economy. **HUSKY** steel welding fittings are designed to provide both. In fact, a welded system using **HUSKY** fittings can now be installed for no more than a threaded system. Or, looking at it another way, you can save as much as 85% per fitting over the welded fittings now in use! **HUSKY** fittings are ideal for all Schedule 40 piping and fully comply with A.S.T.M. A234 specification . . . perform admirably at much lower cost. *

ASK FOR FULL PARTICULARS FROM YOUR WHOLESALER . . . OR WRITE NIBCO INC., Dept. KS6206 Elkhart, Ind.

* Current jobs where **HUSKY FITTINGS** are being used include the following: **KAISER PERMANENTE CEMENT PLANT**, Nanakuli, Hawaii; **U.S. STEEL CORP.**, Chicago, Illinois; **TEXAS A & M COLLEGE**, College Station, Texas; **WOODLAND CHRISTIAN CHURCH**, Lexington, Kentucky; **PURDUE UNIVERSITY**, West Lafayette, Indiana; **McCHORD AIR FORCE BASE**, McChord, Washington; **SONOMA COUNTY CIVIC CENTER BUILDINGS**, Santa Rosa, California; **NORTHWEST ORIENT AIRLINES FACILITIES**, Minneapolis, Minnesota; **FIRST BAPTIST CHURCH**, Lima, Ohio.

Aluminum Clad Home Project Uses Heat Pumps

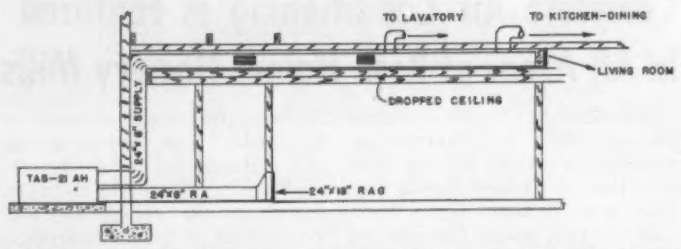
2 Hp. Unit Handles Balanced Heat Loads At 173-House Tract

TAMPA, Fla. — A development of aluminum clad houses, air conditioned by Typhoon heat pumps, is currently under construction here, reports Mark E. Mooney, president of Air Conditioning Equipment Distributors, Inc. here.

A total of 173 homes are planned for the Temple Grove Estates, situated on a hillside in the center of an orange grove. The houses are being sold for about $14,000 by Bolding Construction Co.

John Yates of All Year Appliance Co. here is handling the installation and service of the heat pumps, The two-ton packaged unit fit the homes perfectly, as calculated cooling load is 22,440 B.t.u.h. and calculated heating load is 23,565 B.t.u.h.

The 40 by 28-ft. homes are single floor structures with five rooms. Heat pump is mounted on a slab outside the home. Air is distributed through a furred-down ceiling plenum over a central hallway. Grilles on the plenum serve the three bedrooms and living room. Take-off ducts serve lavatory and kitchen. Return air is taken through a 24 by 18-in. grille in the hallway.



ELEVATION DRAWING shows typical layout for 2-hp. Typhoon heat pump installed in aluminum clad single-story houses near Tampa. From unit on slab, supply air is distributed through dropped ceiling in hallway. Grilles seen on duct above serve two bedrooms. A third on opposite side serves third bedroom. Two short ducts to kitchen and lavatory serve areas not adjacent to hallway.

Gain of Air Conditioning

Air Conditioning Installations In Ft. Worth

(Ten-Year Study)

	RESIDENTIAL			COMMERCIAL			INDUSTRIAL			GOVT. & MUNICIPAL			TOTAL		
	NO.	TONS	TONS PER INST.	NO.	TONS	TONS PER INST.	NO.	TONS	TONS PER INST.	NO.	TONS	TONS PER INST.	NO.	TONS	TONS PER INST.
1950	94	535.5	5.7	193	3,633.5	18.9	2	285.0	98.3	1	35.0	35.0	291	4,509.0	15.5
1951	139	928.5	6.7	205	4,384.5	30.6	2	185.0	92.5	11	172.5	15.7	357	7,551.5	21.2
1952	226	1,379.0	6.1	211	6,268.0	29.7	3	22.0	10.7	2	65.0	32.5	442	7,726.0	17.5
1953	226	1,566.0	4.8	226	5,937.5	26.4	19	1,833.0	95.4	19	304.5	16.0	500	9,641.0	16.2
1954	376	2,079.0	3.1	201	4,799.0	23.0	8	109.5	13.7				605	6,977.5	11.4
1955	710	3,633.5	5.1	247	6,112.0	24.7	6	456.0	76.0				963	10,196.5	10.6
1956	701	3,273.0	4.7	233	4,453.5	19.0	2	485.0	280.5	2	15.0	7.5	938	8,121.5	8.7
1957	1097	4,236.0	3.9	251	4,448.0	17.7	12	615.5	51.3	2	20.0	10.0	1362	9,319.5	6.8
1958	1288	4,572.50	3.6	283	5,142.50	18.2	5	20.50	10.1	6	474.50	79.1	1582	10,240	6.5
1959	1758	6,331.0	3.6	323	4,663.0	14.4	6	178	29.3	5	335.0	67.0	2092	11,507	5.5
TOTAL	6735	28,475		2273	51,713.5		66	4,139.5		48	1,411.5				
													GRAND TOTAL	9322	88,240.5

(Continued from Page 1)

the commercial field is represented by the most tonnage, these figures show. This breakdown is: residential, 28,475 tons; commercial, 51,713½ tons; industrial, 4,139½ tons; government and municipal, 1,411½ tons.

The utility's figures for 1959 only are as follows:

Residential: 1,758 systems of which 683 were in existing homes and 1,075 in new homes (6,331 tons and 8,010 hp.); commercial: 323 systems (4,663 tons and 6,182 hp.); industrial: six (178 tons and 255 hp.); government and municipal: five (335 tons and 465 hp.).

Over-all totals for 1959 amounted to 2,092 systems representing 11,507 tons and 14,912 hp.

This was the biggest year in the 10-year record as compiled by the utility, the best previous year having been 1958 when 1,582 systems representing 10,240 tons were installed.

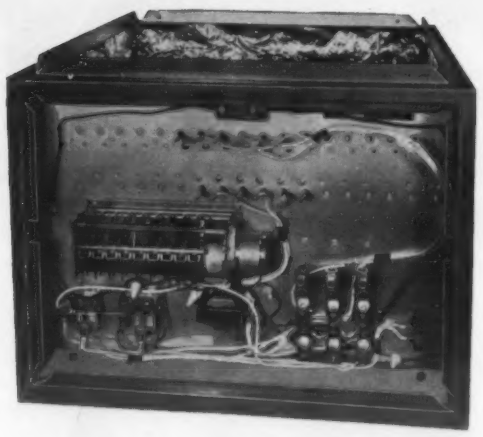
In 1950, the first year noted in the study, there was a grand total of 291 installations representing 4,509 tons.

The big gain in the past decade has been made in residential air conditioning, as

only an
ELECTRIC FURNACE
can provide all
these benefits...

...only the
STEWART-WARNER
ELECTRO-FLO FURNACE
has this sensational
money-saving control

The Stewart-Warner Electro-Flo Furnace consists of furnace and blower sections which can be arranged as vertical or counterflow models.



The Electro-Flo Furnace introduces a new conception of electric heating...*the most completely modulated electric furnace on the market!* It employs air to distribute heat and offers these outstanding advantages—

1. Exclusive Selective-Sequencer which *modulates heat input* to exactly match heat loss.
2. Permits humidity control.
3. Prevents accumulation of stale, offensive odors.
4. Permits introduction of fresh air for ventilation.
5. Constant air circulation prevents "layer-cake" heating.
6. Easily adaptable to summer cooling—using same ducts as for heating.
7. Filters the air clean of dust and pollen.

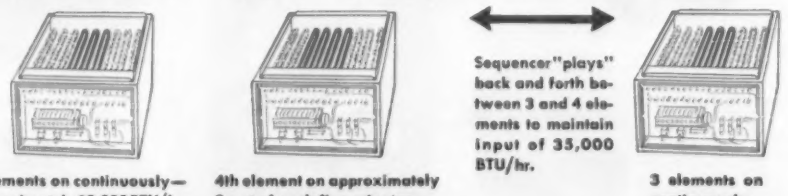
HOW THE SELECTIVE-SEQUENCER WORKS

Depending upon the required capacity, the furnace section contains from 3 to 9 pairs of *sheathed Calrod* heating elements, each pair with an output of approximately 10,000 BTU/hr. Elements are controlled by the motor-operated Selective-Sequencer.

When the thermostat calls for heat, the Selective-Sequencer switches on the first heating element and simultaneously starts the blower. As the thermostat continues to call for heat, successive elements are turned on to meet the demand.

When the heat demand is satisfied, the Sequencer reverses itself, dropping out the heat stages. The cycling on and off of the thermostat will cause the Sequencer to "play" between what ever number of heat stages are necessary to keep room temperature at the desired degree. Since this modulating operation assures constant circulation of warmed air, temperatures are maintained evenly from floor to ceiling.

The Selective-Sequencer *exactly modulates* the heat supply to match the heat loss. Sketches at right show operation for an example heat loss of 35,000 BTU/hr.



3 elements on continuously—approximately 30,000 BTU/hr.

4th element on approximately 2 out of each five minutes.

Sequencer "plays" back and forth between 3 and 4 elements to maintain input of 35,000 BTU/hr.

3 elements on continuously.

Symbol of SW Excellence

STEWART-WARNER

HEATING AND AIR CONDITIONING DIVISION • Dept. BA-60, Lebanon, Indiana

WITT REMOTE AIR COOLED CONDENSERS

With The Low Silhouette

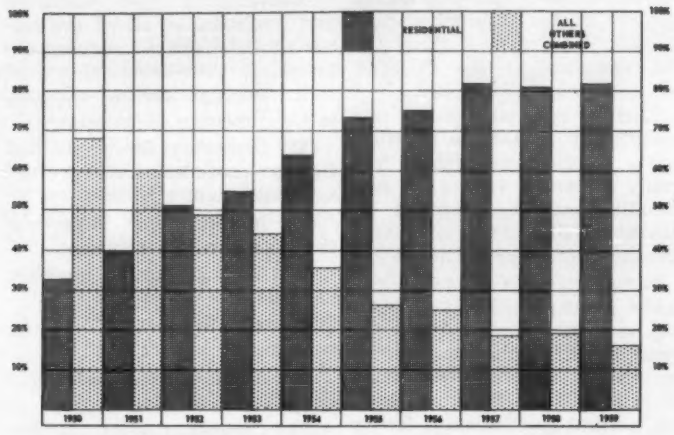
Efficiency, economy, dependability—those three words most effectively describe the operation of Witt Air Cooled Condensers. Available in a wide range of centrifugal blower and fan type models, for single or multiple compressor installations, for indoor or outdoor applications, you'll find a Witt Air Cooled Condenser to handle any size air conditioning or refrigeration system. Winter control systems available for low temperature areas—multiple circuiting available at no additional charge.

Write For Complete Witt Catalog

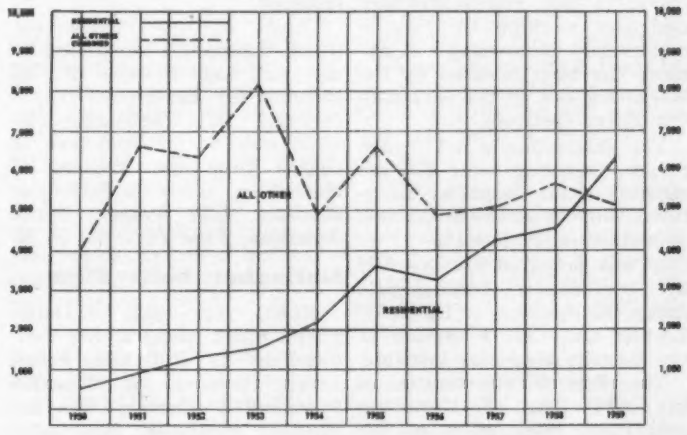
A. H. WITT COMPANY, INC.
940 N. Sycamore Ave., Los Angeles 38, Calif.

In 10 Years Shown In Study by Ft. Worth Utility

Air Conditioning Installations
Percent of Total Installations
(Ten-Year Study)



Air Conditioning Tonnage
(Ten-Year Study)



would be expected. The number in this category has climbed almost steadily since 1950 when 94 jobs totaled 535.5 tons were installed. Interestingly enough, the average tonnage of residential systems here has dropped fairly steadily from the 5.7 tons in 1950 to the 3.6 tons noted in 1959.

The increasing numbers of residential installations has also resulted in a gradual drop in tonnage per job of all installations. This figure was 15.5 tons in 1950, 5.5 tons in 1959.

Ratio of residential to other types of air conditioning installations is shown also in this 10-year study by graphs of percentages. In 1950 residential accounted for 32% of installations and 12% of the tonnage; in 1959 residential had 82% of the installations and 55% of the tonnage.

Houston Dealer Opens Fifth Branch

HOUSTON, Texas — Opening of its fifth branch store in the Houston area, at 2930 Luell, was announced by American Air Conditioning & Color TV Co.

Supervised by Don Sapp, the new outlet will handle Fedders, Friedrich, Gibson, and York equipment, it was stated. A line of color TV equipment will be installed in the fall.

Harold Goodman, owner of the six-year-old firm, said all American Air Conditioning stores feature complete year-round installation and maintenance service on home cooling equipment.

Nu-Way, Sunstrand Name Wm. R. Sinks Sales Manager

ROCK ISLAND, Ill.—William R. Sinks has been named sales manager of The Nu-Way Corp. and Sundstrand Engineering Co. here.

W. R. Sinks

Announcement of Sinks' appointment to succeed John W. Olson in this position was made by J. E. Rettke, president of the firms.

In his new post, Sinks will supervise sales of the firms' oil and gas heating equipment through sales divisions extending from coast to coast. Previously he served as an account executive in the midwest sales office of General Controls Co.

MIGHTY MITE PROTECTS MOTORS

Against

OVERLOADS
OVER VOLTAGE
UNDER VOLTAGE

MIGHTY MITE MOTOR PROTECTORS

MECHANICAL INDUSTRIES PRODUCTION CO.
223 Ash Street Akron, Ohio
BAA 2335/949

Ready to Roll on your Production line...

...COILED GM STEEL TUBING

Top refrigeration people depend on top tubing people

Coiling—available up to 3000 feet—eliminates unnecessary joints and short end waste—adapts most economically to modern production line techniques and provides better inventory control at less expense. Add GM Steel Tubing standards for quality, strength and cleanliness and schedule-meeting delivery service. You'll have the unbeatable combination that top refrigeration people know they can rely on. For detailed data write or wire GM Steel Tubing Sales Manager, *Rochester Products Division of General Motors, Rochester, New York.*

Precision Level Winding equipment produces level wound steel tubing coils. Accurate control lays each wind level with adjacent tube and insures precise coil dimension. This procedure insures easy adaptation to production line requirements at modest extra cost. Details on request.

GM

STEEL TUBING
BY ROCHESTER PRODUCTS

AMERICA'S LARGEST MANUFACTURER OF REFRIGERATION TUBING

RP

1 Million Sq. Ft. Radiant Accoustical Ceiling Installed

CHICAGO — "The world's largest radiant acoustical ceiling," with approximately 1,000,000 sq. ft., has been installed in the Shell Centre on the South Bank of the Thames, London, England, according to Burgess-Manning Co.'s Architectural Products Div.

This installation provides radiant heat, sound absorption, and summertime cooling to the major portion of the various buildings in this Centre.

Heating is achieved by circulating hot water through sinuous ceiling coils, supporting the perforated aluminum panels which radiate the heat. Thermostats in each office provide flexibility of control.

Publication Aids Researchers, Designers In Residential Oil-Burning Equipment Field

NEW YORK CITY—A publication to help researchers and designers working to improve residential oil-burning equipment has been released by the Marketing Div. of the American Petroleum Institute.

The publication is a 110-page review, including some 300 abstracts, of the technical literature available on the broad field of residential oil-burning.

It was prepared for the API by combustion technologists under the direction of David W. Locklin and Carl F. Speich at the Battelle Memorial Institute.

The Fuel Oil Committee of the API Div. of Marketing authorized preparation of the literature review in support of its present program to stimulate industry-wide oil-burner research.

Copies of this review, entitled "Literature Pertaining to the Art and Science of Oil Burning for Residential Applications," API Publication No. 1537, may be obtained free of charge from the Division of Marketing, American Petroleum Institute, 1271 Avenue of the Americas, New York 20, N. Y.

Gallagher Sells Firm

ELKO, Nev.—Sale of Gallagher's Sheet Metal & Air Conditioning to Bill and Frank Sheen, owners of Reardon Plumbing & Heating, was announced jointly by Jim Gallagher and the Sheens. Gallagher operated here for eight years.

Dealers Cautioned About Mixing Fuel Oil Additives by OHI Speaker

NEW YORK CITY—Fuel oil dealers who place an additive in oil that already has an additive may be in for trouble, warned Russell W. Henry of Shell Oil Co., speaking at the Oil-Heat Institute convention here.

"Actual precipitation of one additive by another is possible, and . . . other more subtle, less easily discerned effects on fuel stability may be obtained by use of special additives in fuel already containing additives."

Reviewing changes that have taken place in refining of heating oil over recent years as the result of changing market requirements due to dieselization of railroads and the upsurge of the natural gas industry, Henry put special attention on the role of additives, whose use has become widespread.

"Competitive fuel additives perform some or all of the following functions in varying degrees," he explained:

"1. Prevent screen clogging in the presence of moisture.

"2. Disperse finely divided sludge particles and prevent agglomeration.

"3. Inhibit color deterioration and particle formation.

"4. Reduce foaming tendency of the fuel.

"5. Aid in settling of moisture haze.

"6. Remove preformed screen deposits.

"7. Prevent rusting of ferrous surfaces with which fuel comes in contact.

"8. Reduce the catalytic effect of metals, particularly of copper."

Some additives, however, may have side reactions with other more essential additive components, Henry indicated.

"In some cases, additives which are very effective combustion promoters have proved to be unsuitable in certain fuels because they promote instability," he declared.

New zone valve matched to modern comfort...

Easy to install, foolproof in operation, the economical new TACO-Zone provides the positive, reliable control that today's water heating and cooling systems demand.

Small and compact, the TACO-Zone closes tightly; mounts in any position. Just open manually before sweating . . . no need to remove head . . . wire only three terminals! No motors, gears, cams or pinions to cause trouble, wear or noise. Operates at a low, safe 24 volts. Power element crushes foreign particles which often foul ordinary valves, and is easily replaced without draining the system.

For your next heating or cooling installation, "build in" total comfort and troublefree operation with TACO-Zones. Be sure you have specifications on other TACO Products . . . the *complete* line that's "efficiency engineered" to cover the field. Write TACO HEATERS, INCORPORATED, 1160 Cranston Street, Cranston 9, Rhode Island.

TACO

SERVING THE HYDRONIC INDUSTRY SINCE 1920

Penn Heating Controls Catalog Includes Several New Listings

GOSHEN, Ind.—A new condensed catalog (Bulletin 1508-AG) of heating controls has been issued by Penn Controls, Inc. here.

Several new listings are shown in addition to controls previously cataloged. A new line of electric heating thermostats is offered for the first time. A feature of the "Click Dial" wall mounted thermostats is the precise adjustment of temperature, the company said. Turning the dial one "click" changes the temperature setting one degree.

A new low voltage heating thermostat, Type 820, is also appearing for the first time. Another new listing is an automatic changeover control, designated the Type 426X. The new control is used with a combination heating and cooling thermostat and selects the correct thermostat function.

New additions to Penn's warm air controls are the single element Series 530 combination fan and limit controls. "Loss of charge" protection is provided in the controls.

Hilligoss Joins McGraw-Edison

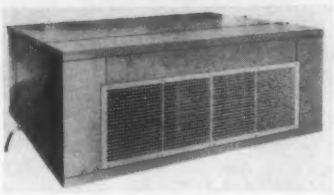
ALBION, Mich. — Donald G. Hilligoss has joined McGraw-Edison Co., Albion Div., as sales manager of the HeaTube Dept.

He was formerly with the Industrial Electric Heating Dept. of General Electric Co.

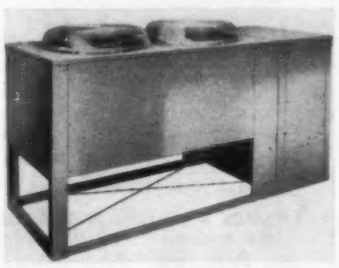
NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Heat Controller Enters Commercial Field with 7½ and 10-Ton Equipment

JACKSON, Mich.—With the addition of 7½ and 10-ton air-cooled condensing compressor sections with horizontal air handlers to its line, Heat Controller, Inc. announces its entry into the commercial air conditioning market.



HORIZONTAL air handler



CONDENSING unit

"The ability to remote either or both the condenser unit and the compressor section, gives to the field a versatility in design which permits maximum flexibility in locating equipment," states J. A. Knight, president.

"Low head operation" is one of the advantages claimed for the new Heat Controller line. Using two condenser fans, one of which is cycled to maintain adequate head pressure during moderate and cool ambient conditions, "off season cooling is perfectly safe for the system," according to the company.

The pump down control is fool-proof, Knight claims. "When the thermostat is satisfied, the compressor continues until the low side is pumped down to the cutout point of the low pressure control. Minimum refrigerant remains in the low side or crankcase during the off cycle."

Normal sequence of control operation on the new commercial units is as follows:

When cooling is required, the thermostat energizes the slave relay and liquid line solenoid valve. With the solenoid port open, refrigerant is admitted to the air handler coil, thus raising the suction pressure and closing the contacts of the low pressure control. This completes the starter holding coil circuit and starts the compressor.

When room temperature drops to the cutout point of the thermostat, the liquid line solenoid is de-energized through the opening of the slave relay. The compressor continues to operate until the low side is pumped down to the cutout point of the low pressure control. The compressor is off when the low pressure control contacts open. The compressor cannot start until the thermostat again calls for cooling.

"This method of control incorporates the feature of maintaining a minimum portion of the refrigerant charge in the low side during an off-period while preventing possible short cycling of the compressor should the low pressure build up rapidly—as it might with, say, a slight leak back through the compressor discharge valves—and closing the contacts of the low pressure control."

Condenser fans are interlocked with the compressor circuit. One fan starts automatically with the starting of the compressor. The other fan is controlled by a reverse-acting, high pressure controller which starts at a predetermined head pressure and stops at the low or cutout setting of the controller.

"An important feature of the control system is the convenience aspect of resetting the system high pressure control or compressor starter heater elements. Should these trip due to a momentary overload, they can be reset by turning the room thermostat to the off position and then back to the automatic position.

"This action is made possible through the use of an impedance relay in the control circuit, and it eliminates the need to travel to the roof or compressor location to press reset buttons," Knight said.

Earlier this year, Heat Controller added a new 5-hp. self-contained air conditioner to its residential line. The unit, model PA-60-1, is approved for outdoor installation also, the company stated.

Charlottetown Mall Completely Cooled

CHARLOTTE, N. C.—A "second village square" has been created by Charlottetown Mall, fully-enclosed, fully air conditioned shopping center outside of Charlotte.

Attractions along the mall include tropical gardens, a pool containing rare fish, three large bird cages, park benches, and gas street lamps once used in Philadelphia more than 100 years ago.

No matter what the weather a Carrier water chiller, which uses steam to produce cooling, helps to "make shopping a breeze."

The project owned by Community Research and Development, Inc. consists of 40 stores, a cafeteria, and 300-seat auditorium.

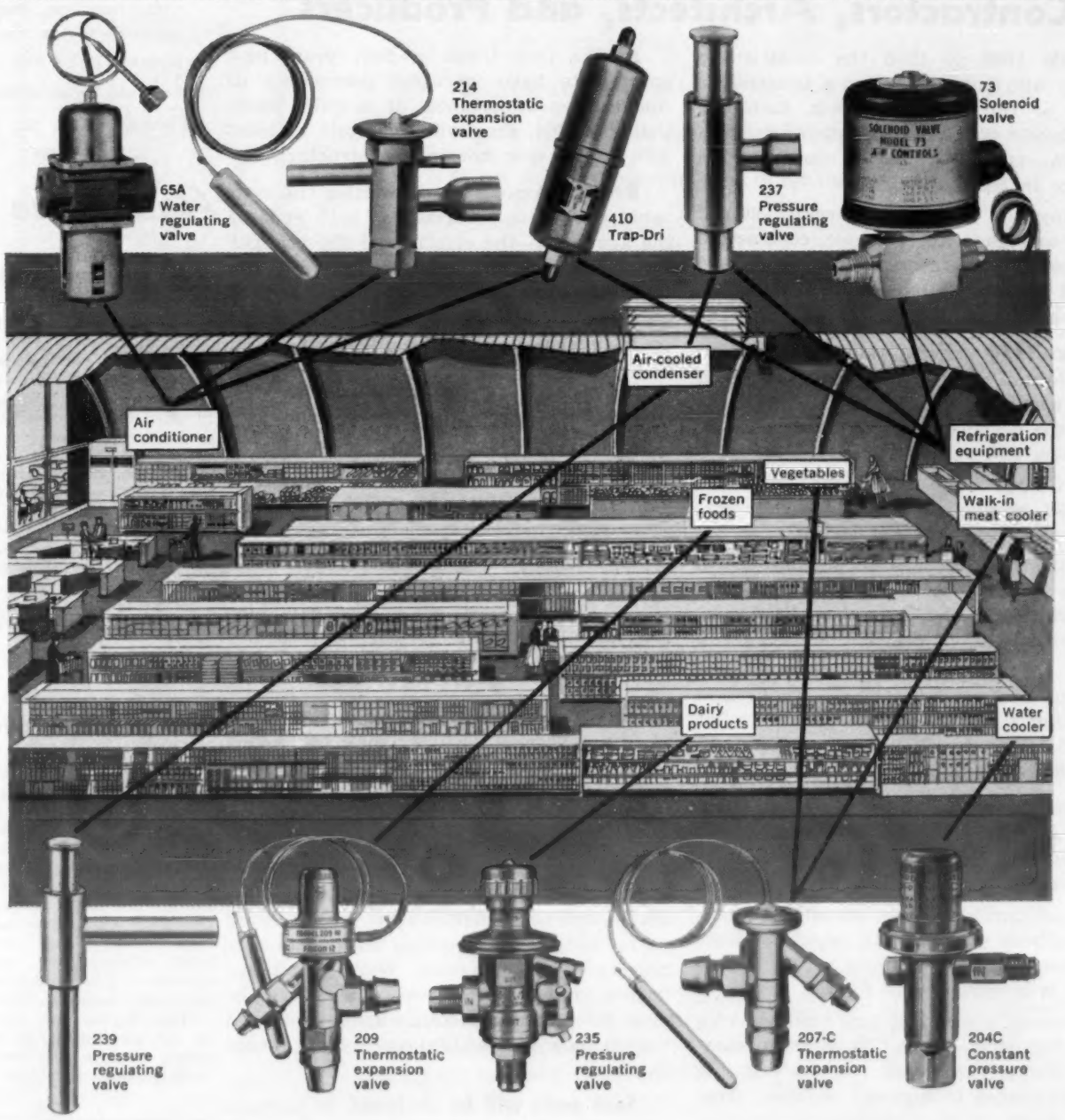
Low-Vibration Cooling Units Going Into Hospital's 18th Floor

EAST ORANGE, N. J.—Two turbine-driven Worthington centrifugal refrigeration machines will soon be housed on the 18th floor of the New York University Hospital building, a new addition to the Bellevue Medical Center.

The machines will supply close to 2,800 tons of chilled water to nearly 1,000 Worthington induction room air conditioning units located throughout interior zones in the building.

Worthington, which will also supply the pumps for the system, built the air conditioning units with low vibration characteristics permitting them to be located on the 18th floor, the company pointed out.

Architect for the new building is Skidmore, Owings & Merrill; consulting engineer is Syska & Hennessy; and the mechanical contractor is Mance Corp.



To cool a cabbage . . . chill a cheese . . . store a steak . . . control the condensers . . . keep shoppers from sweltering . . . shop Controls Company of America first. CC is your best-stocked supermarket for every type, variety, and size of control you need for store equipment. More than 300 wholesalers nearby and ready to supply what you want when you want it.

Creative controls for industry

CONTROLS COMPANY OF AMERICA

HEATING AND AIR CONDITIONING DIVISION

2460 N. 32nd Street, Milwaukee 10, Wisconsin • Cooksville, Ontario • Zug, Switzerland

AN INTERNATIONAL INSTITUTION • SUBSCRIBERS ALL OVER THE WORLD

Trade Mark reg. U.S. Pat. Office; Est. 1926

AIR CONDITIONING HEATING & REFRIGERATION NEWS

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F. M. COCKRELL, *Founder*

'The Conscience of the Industry'

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They'll Do It Every Time

by Jimmy Hatlo

IS THE BODY MOVING?
MOVING? HEH-HEH-IT'S HARDLY BREATHING...
DRONEBERRY IS SUSPENDED ANIMATION AROUND THE SHOP.... HE MOVES SLOWER THAN BIG BEN'S HOUR HAND...
BUT GET A PHOTO-FINISH OF HIM ON PAY-DAY... HE DOES THE 50-YARD DASH TO THE DOUGH COOP IN NOTHING FLAT!!
THANX AND TODAY OUR HAT IS OFF TO GALE J. NOJONIN, 210 SO. D ST., LAKE WORTH, FLA.
GIMME !!!
PAYMASTER
3-18

Pertinent Potencies for Consulting Engineers Contractors, Architects, and Producers

FROM 1960 to 1975 the construction industry will have to replace a tremendous portion of the houses, schools, factories, offices, hotels, stores . . . any type of building you can name . . . which now are in existence in the U.S.A.

During the life of a presently signed 40-year mortgage, for example, contractors and consulting engineers literally will have to build another United States of America, architecturally speaking.

Before 1970 arrives, people who design and build will put in place nearly a trillion dollars worth of construction. Toward the end of the soaring '60's your sons may be purchasing two million houses annually.

Dr. George Cline Smith, vice president and chief economist, F. W. Dodge Corp., New York City, declares:

"In the next 10 years our population will increase by about 34 million, which means the addition of a Chicago metropolitan area, suburbs and all, to our nation every two years.

"Total new construction, now running at $55 billion a year, will have to rise to at least 65 billion by 1970, measured in constant 1960 dollars.

"This means that, during this 10-year period, some $600 billion will go into new construction, with quite possibly another $300 billion for maintenance and repair."

To accommodate the 34 million additional citizens expected will require at least 10 million net extra housing units. Eleven million is a more likely figure.

Moreover, we should note that existing houses regularly are lost from the present supply for a variety of reasons—ranging from hurricanes to highway building, from fire to floods, from tornadoes to termites. We will need an extra four million units during the upcoming decade for this replacement purpose.

Pasted onto that predicted 11 million *originated* households, is a *total* requirement of 15 million units by 1970—when we take into account replacement of "accidental" losses of housing units.

In the past three or four years new apartments have increased perceptibly in construction importance. It is quite likely that, by 1964, they will constitute at least 20% of all new housing construction.

Reason: Among our population the most rapid growth is occurring at both ends of the age scale—the elderly and the younger generations. Young marrieds start out life together in apartment buildings. Oldsters tend to end up in them.

Both these groups are likely to want, and best be able to afford, compact housing units. Presumably they will prefer (or have to accept) rental deals.

Moreover, office building and factory construction by 1970 should attain a $22 billion a year figure, as compared to $13 billions nowadays.

In Summary, the Sixties promise to be a period of leapfrogging markets for virtually all types of construction. New buildings, plus maintenance and repair, will require nearly a trillion dollars worth of materials and services.

Effect of highway modernization alone on the American economy may be likened to the impact which railroad building had in the last century. Vast public and private investment, providing immeasurable stimulus to economic growth and development in general, will ensue.

More and more houses erected in the Sixties will be assembled from prefabricated parts, instead of laborious on-the-site cutting and fitting of pieces. Walls, partitions, trusses, and other large-sized units will be mass-fabricated in factories under controlled conditions and assembled quickly and cheaply on the lot.

Such parts will be designed to perform several interlocking functions, and they will make an ever-increasing use of new synthetic materials which research is uncovering.

Any way you look at it, business should be good for consulting engineers, architects, contractors, and manufacturers. And our sons and daughters, plus our as-yet-unborn grandchildren, will benefit.

To stand strong graciously; to smile sincerely; to love, always; and to seek understanding—these are the worthy ambitions of a life worth the living.—ESTHER FRESHMAN.

From the Files of the News

25 years ago . . .

A proposed municipal ordinance, aimed at regulating the qualifications of refrigerator repair and servicemen, has been received by the Buffalo (N.Y.) Common Council after it had aroused a storm of protest from electrical appliance dealers. . . . York got the contract to air condition six entire floors of the U.S. Department of Interior Building in Washington, D.C. at a cost of $1,000,000. . . . Newton, Iowa, population 12,000, became one of the first cities in the world to boast of a completely air conditioned hotel, when the 100-ton system in the Maytag hotel went into operation.

A project of 80 homes in Flushing, N.Y., two-story, six-room houses, are to be cooled with a Chrysler Airtemp chilled water system. . . . Additional profits possible through the use of its instantaneous beer coolers is the theme of a new folder issued by Temprite Products Corp.

Feature of Cliff Bell's new Detroit nightclub are refrigerators from which patrons can make their own selection of fancy dishes and wines. . . . A new "Rancostat" control has a handy service dial which, however, has a cover plate. To further prevent tampering the service dial must be turned by a screwdriver, or a tool carried by the serviceman.

10 years ago . . .

Revelation that a "model" ordinance to restrict the use of water in air conditioning has been submitted to the American Water Works Assn. was made at the Water Conservation Conference, with restrictions directed primarily at the 5 and 7½-hp. units. . . . Check-up was started on compliance with New York City's regulations requiring that all cooling systems of 3 tons capacity or over use water saving devices.

Meats frozen and pre-packaged at the packing house may ultimately cost the consumer less than fresh meats, but there are still several problems to be solved before such practice becomes general, ASRE heard at its Spring meeting. . . . Philadelphia dealer offered a Fedders ¾-hp. room air conditioner at $299.95 and a loan of a TV set for 90 days at no extra charge.

New Schwegmann Bros. market under construction in New Orleans, laying claim to being largest in the world, will have 400 ft. of open self-service refrigerated display cases, refrigerated by 13 remote condensing units which will also handle four walk-in coolers.

50 years ago . . .

These 50-to-60 years ago items are from the Recold Museum Library, maintained by Hy Jarvis, Recold Corp. president.

The fashionable trend for ladies of means to store their precious furs during the summer months so that the pelts won't revert to type or go into a slump has produced an unexpected offshoot, new techniques of fire prevention in storage plants. There are two general ways of keeping a pelt cool—you literally put the ermine on ice (direct method) or you can blow cold air around it from refrigeration units. Now a cape or stole lying on or near a cake of ice is in no particular danger. But that same handsome object could make good tinder if someone around the shop were careless and dropped an old cigar near one of the air ducts leading to the storeroom.

OFF THE CHEST

MOTOR VOLTAGE VS POWER SUPPLY VOLTAGE, DISCUSSED BY CENTURY ELECTRIC DISTRICT MGR.

Century Electric Co.
St. Louis 3, Mo.

Editor:

There has been a tendency over the past several years for manufacturers of motor driven equipment to order motors of the same voltage as that called out in electrical specifications for the power supply voltages.

The practice is most prevalent when 3-phase, 60-cycle, 240 or 480-volt power is supplied. For these supply voltages the standard rated motor voltage is 220/440. Most motor manufacturers stamp the nameplates 208-220/440 to indicate that the motor may also be used on the 208-volt systems. The regular guarantee is that the motor will operate satisfactorily at plus-or-minus 10% of rated voltage. Therefore, standard 220/440-volt motors may be used successfully on the 208, 240, and 480-volt supply voltages.

The approximate effect of voltage supply variations at the motor terminals on the characteristics of polyphase motors is shown in the table below.

PER CENT RATED VOLTAGE	110%	90%
Torque starting & running	21%	-19%
Speed — full load	1%	-1.5%
Efficiency — full load	0.5 to 1%	-2.0%
half load	-1 to 2%	1 to 2%
Power factor — full load	-3%	1%
half load	-5 to 6%	4 to 5%
Current — starting	10 to 12%	-10 to 12%
full load	-7%	11%
Temperature rise	-3 to 4° C.	6 to 7° C.
Overload capacity, Max.	21%	-19%

Due to line losses in the distribution systems the voltage at the motor terminals is always lower than at the transformer. Therefore, it is desirable to have motors with a rated voltage below that of the transformers. In the case of 480 volts at the transformers the motors should be 440-volt to get the best operating characteristics. It insures that motors will positively start their load, bring machines up to speed quicker, and operate at higher efficiency with less temperature rise than those motors operating below rated voltage.

The motor manufacturers carry in stock 220/440-volt motors with nameplates stamped 208-220/440. This indicates that they will operate satisfactorily on voltages at the motor terminals of from 198 to 242 and from 396 to 484. This standard motor can be used on 208-volt supply system but some motor manufacturers stock 208-volt motors and price them the same as 220/440-volt motors. For other voltages to exactly fit the supply voltage an extra charge is made and the motors must be produced after orders are received. The delay in shipment is often costly to suppliers, contractors, and owners. Thus, to obtain high quality motors that will perform satisfactorily on the job specify standard voltage whenever possible.

K. G. SCHMIDT,
District Manager

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

CONTRACTOR SEEKS ANOTHER SERVICEMAN

Shaker, Travis & Quinn, Inc.
Wappingers Falls, N. Y.

Editor:

Since you edit the AIR CONDITIONING, HEATING & REFRIGERATION NEWS, I thought you might be able to give us some advice.

We are looking for another air conditioning, refrigeration, and heating serviceman. We have two such servicemen now, but one is over 65 years of age and naturally may retire in the near future.

Our air conditioning work runs all the way from the biggest units for factory and commercial use down to window air conditioners. But we are more concerned with air conditioning service on the larger commercial units.

We are a well established plumbing, heating, and air conditioning firm and have been in business in this area for the past 33 years.

THOMAS SHAKER, JR.

COINS 'INVENTORYITUS' FOR COMMON DISEASE

2906 Cedarview Dr.
Austin, Texas

Editor:

I was glad to see the "Watch It, Fellows!" warning regarding Inventories in your June 6 "Inside Dope."

I have seen so much trouble due to this disease that I coined the name "Inventoryitus." I am surprised more people have not independently coined or used this word. Perhaps the disease is so common in both large and small industries that it is thought of as a "benign tumor" which we can more or less forget.

However, one is never sure that a benign tumor is not or will not become malignant and then it is often too late. I feel every case of "Inventoryitus" should be treated as malignant and the necessary surgical work should be performed.

ROBERT S. TAYLOR

Philco Distributor Expands Operation

PHILADELPHIA—The John M. Otter Co., Philco's independent distributor for the Philadelphia-Trenton area, is enlarging its operations to include the New York and Newark territory formerly handled by Philco Distributors, Inc., Long Island City, it was announced by Henry E. Bowes, Philco's vice president-marketing.

HENRY VALVE CO.
CONTROLLING FLOW SINCE 1914

Every product bearing the name Henry carries with it complete assurance of on-the-job satisfaction. This quality of performance and the confidence it inspires have made Henry the most accepted line in the industry. For Commercial Refrigeration and Air Conditioning Systems Using Refrigerants 12, 22 and Ammonia.

VALVES—Shut-off
Packless, Packed and Wing Cap Types
Integral and Flanged Connections

VALVES—Pressure Relief
Piston and Diaphragm Types for Atmospheric and Vent Line Applications

VALVES—Flow Check
Spring Loaded and Free Floating Types—also for water and air

FILTER-DRIERS & Driers
DRI-COR Sealed and Cartridge Types with Molded Core and Granular Desiccants

STRAINERS—All Types
Sealed and Cleanable—Applicable for water, oil and air

Also: Tube Piercing, Line Tapping, Line Port and Can Tap Valves
Strain-O-Kaps and Terminal Seals for Hermetic Compressors

HENRY VALVE COMPANY
For Refrigeration, Air Conditioning and Industrial Applications
MELROSE PARK, ILLINOIS, U.S.A. CABLE: HEVALCO, MELROSE PARK, ILL.

Former 'Factory Experts' Use Factory Methods To Operate Service Business In Small City

GAINESVILLE, Ga. — When the average serviceman hears an "expert" from the factory tell him how he should run his business, he respects the expert's technical knowledge but usually doubts that the expert really knows "how it is" in the field.

Two former "factory experts" here who've gone into the service business themselves, however, are proving they knew what they were talking about on the business as well as the technical side of servicing.

Established here in July of 1958, Heathman-Clark Co., Inc., was organized by Chas. M. Heathman and Carlton Clark. Heathman for many years had been associated with Servel's electric division before becoming national service manager for the Brunner hermetic plant located in Gainesville.

Several years of ammonia experience locally preceded Clark's joining Brunner in 1955 where he took charge of field service.

Reluctant to move from the area when Dunham-Bush transferred the Brunner hermetic operations to its headquarters in West Hartford, Conn., Heathman and Clark set up their own service firm.

There are many interesting aspects to the Heathman-Clark operation here with respect to both methods and policies. Take credit, for example, which is always a problem in service, and other businesses, for that matter.

"We've never turned a man down for credit," Heathman says, "but we go out and collect when bills are due. When people get behind, you have to ask for the money. This is probably going to make them mad, but they're going to get mad anyway. But I always shake hands when I leave," he adds.

In its first year of operation, the company charged off only one account totaling $6.75 as a loss, and over its two-year experience now "if we charged off that one and everything that's even questionable, we'd have lost a mere 12¢ per $100," Heathman points out.

NOT ONLY does Heathman-Clark Co. maintain an exceptionally large stock of repair parts and replacement parts but it dramatizes the fact with this display right in its front office. The firm is headed by Chas. M. Heathman (l.), Carlton Clark (r.), and Mrs. Heathman.

Obviously, there's a lot more to it than just the appearance of trusting everyone or doing service for free, but there are no hidden "gimmicks." Heathman explains:

"We never let a bill run more than our estimate, even if we lose money on the job. We do this to build up our reputation.

"We give a year's warranty on our labor even though we may not have sold any equipment or parts on the job.

"If a customer thinks our bill is too high, we'll sometimes suggest that he wait for six months and then see if our bill was high. Our contention here is that our good service costs the customer less in the long run.

"Another thing we'll do sometimes is tell customers that if they think our bill is too high, just cross off our charge and put their own down. Only one customer has ever taken us up on this offer, and his price was just a bit under our's," says Heathman.

Firm Never Presents Bill on the Job

Unless a customer insists on one, the firm never presents a bill on the job, preferring, instead, to send him a bill from the office.

There are two motives for this approach. First, double-checking at the office minimizes the possibility of a mistake in adding up the bill. A mistake in the customer's favor immediately penalizes the firm; a mistaken overcharge won't help the company's relations in the long run.

Equally important is the fact that Heathman-Clark sends out professional appearing invoices that impress the customers very much, the firm is convinced.

"We aren't, and never will be, as big as General Motors, but we can have a truck that looks just as nice and we can send out invoices that are just as businesslike as those from General Motors," both Heathman and Clark agree, their philosophy being that merely because a firm is small it doesn't have to be sloppy in either appearance or methods.

Cleaning and Sweeping Is First Job Each Day

Incidentally, the first chore of the firm's employes every morning is to clean and sweep up the shop. A few firms equal the cleanliness of this place, but none surpass it, in this reporter's experience.

"We think the customer is always right, except when he tries to tell us how to fix his refrigeration or air conditioning system," Heathman says to emphasize another basic operating principle the firm follows.

"Refrigeration Service Specialists" is the descriptive slogan Heathman-Clark advertises and promotes, and like the medical specialist who refuses to let the patient prescribe treatment for himself, this firm reserves the right to make decisions on what is needed for repairs.

"When we go on a repair job, we do what we think is right without asking the customer be-

Carrier

AUTOMATIC ICE MACHINE

Certified Capacity

This certifies that this Carrier Model.....Automatic..... installed at:

.....(NAME OF PLACE)

.....(ADDRESS OF PLACE)

for .....(OWNER OR OPERATOR)

will produce or deliver.....pounds of ice per 24 hours EVEN WHEN OUTSIDE AIR TEMPERATURE IS AS HIGH AS.....°F., AND INLET WATER TEMPERATURE IS AS HIGH AS.....°F. When air and water temperatures are lower, equipment installed is certified to produce or deliver proportionately greater quantities of ice

This certificate is based on the conditions that the machine is properly installed, and regularly and properly cleaned and serviced by an authorized Carrier dealer

CARRIER ICEMAKER DEALER ..... CITY AND STATE .....

ADDRESS ..... TELEPHONE .....

DATE..... SIGNED.....

26-29M-11-56 — COPYRIGHT 1955 CARRIER CORPORATION, SYRACUSE, N.Y.

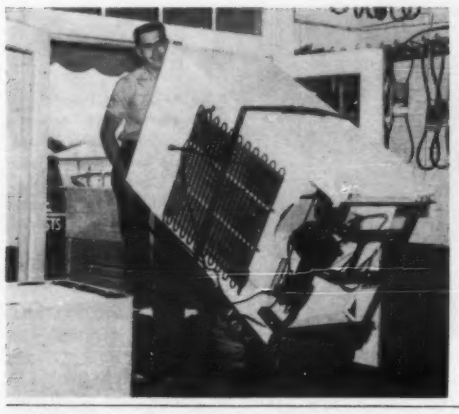
ONLY CARRIER OFFERS ICEMAKERS WITH CERTIFIED CAPACITY

There are 16 Carrier Icemakers to give your prospects exactly the kind of ice they need. You can stand behind the amount of ice they'll expect, too, because every Carrier Icemaker comes with capacity certified in writing.

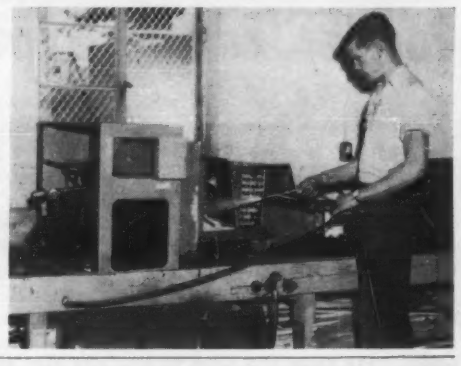
There are no "up to" qualifications on Carrier Icemakers. There are no "average" production figures. Capacity is determined according to air and water temperatures where your customers are.

You can show how prospects save as much as 80% on ice with a Carrier Icemaker. The exact figures—and a lot of other trustworthy facts—put Carrier Icemaking Equipment dealers at the head of the field. If you'd like complete data, call your Carrier distributor, listed in the Yellow Pages. Carrier Corporation, Syracuse 1, New York.

Carrier AIR CONDITIONING • REFRIGERATION



SHOP benches for unitary equipment repair were made 20 in. high to line up with bed of standard pick-up truck when parked at door. As Herbert Bennett shows here, this simplifies and minimizes handling of heavy equipment brought in for service.



EXTENSIVE and unusual facilities are provided in Heathman-Clark shop such as this special wash bench, which is equipped with recirculating pump, heated drum for cleaning solutions, and a connection to the shop's compressed air tank that lets a mechanic like Larry Parks direct a powerful spray on equipment as needed.

cause he'll usually say 'no,'" Heathman says.

"We'll install a drier, sight glass, control, fan, or even a motor-compressor, (in a few instances, at least) without asking the customer's permission because we can only assume he wants us to fix the job," Heathman adds.

As a standard practice, on all commercial systems that have a liquid receiver but have no stamped indication of the proper refrigerant charge, the firm installs a sight glass. If it's a sealed system, a sight glass combined with a moisture indicator is used.

"We explain to the customer how he can read the sight glass and moisture indicator, and with this information we can often diagnose service complaints over the phone," Heathman says. "This, too, can impress the customer, besides helping convince him that the cost of the sight glass installation was well worth while.

"Another thing: if the customer questions the need for a sight glass, we ask him, 'Have you been dollared to death on refrigerant?' He usually says yes, so we explain that with a sight glass we won't be selling him any more refrigerant than the system should have," Heathman declares.

Nothing but Electrical Repairs on Self-Contained Systems Done In Field

On self-contained equipment it is the firm's standard practice to permit nothing except electrical repairs to be made in the field. If more involved service is required, the units are brought into the shop.

Even here it's the firm's policy to allow only the owners—Heathman or Clark—to condemn a hermetic compressor.

This policy was established the "hard way," i.e., after a former employe had condemned a compressor that was later proved to be okay.

"This sort of thing could hurt our reputation badly," Heathman says.

Shop Facilities, Tools, Supplies Exceptional

Shop facilities, tools, and supplies appear to be exceptionally good. The firm carries, for example, about $7,000 worth of inventory in replacement parts and supplies, including more than 2,000 air filters of just about every size, including filters for room air conditioners.

"If a customer comes in for a special size filter that we don't have, we try to sell him a 'do-it-yourself' trimmable filter as a temporary makeshift, but we make careful note of the size he wanted and then order a dozen of them. But we don't order any filters unless we know it's in use in the area," he explains.

These filters along with rather complete lines of other replacement parts are prominently displayed in store area of the firm to impress the customer who drops in.

Because there's no wholesaler in Gainesville, Heathman-Clark finds it important to maintain what is perhaps an unusually large stock of parts. Buying in such quantity from an Atlanta wholesaler, however, also gets the best possible discount for the firm, who is also able to help out other service firms in an emergency once in a while. This doesn't do general relations in the community a bit of harm, either.

Maintaining and displaying a considerable stock of repair parts fits in nicely with the firm's over-all aim "to put showmanship in servicing," Heathman indicates.

"When Clark or I go out on a call, we purposely don't look at the wiring diagrams, and we can trouble-shoot a hermetic in five minutes, usually," he said, "which impresses customers."

To remind themselves and to train employes ("we prefer to hire bright young men with no experience in refrigeration and train them our way), Heathman and Clark, for example, have devised "jingles" to aid in remembering the terminals of a hermetic without looking at a wiring diagram.

The "jingle" for a Tecumseh unit is "Common Sense Rule" with the "C" of "Common" representing the common terminal, the "S" of "Sense" representing the start terminal, and the "R" of "Rule" representing the run terminal. They visualize the jingle thusly:

Common
Sense Rule

which corresponds to the physical location of the terminals.

For Servel and Bendix-Westinghouse units the "jingle" is:

(Continued on next page)

York counts on
WOLVERINE TRUFIN®
for Quality and Maximum Heat Transfer

In Atlanta, Ga., customers of Rich's Department Store shop in air conditioned comfort—thanks to air conditioning equipment manufactured by York Division of Borg-Warner Corporation, York, Pennsylvania.

And, like countless other air conditioning installations made each year by York, this one too, uses integrally finned Wolverine Trufin Type S/T condenser tubes in its heat exchangers.

Of Wolverine Trufin and its ability to increase heat transfer capacity, York engineers say, "Quality materials are as necessary as the skilled workmanship that goes into every York product. We find that Wolverine Trufin's extended surface gives us a good ratio of inside to outside heat transfer. It permits the maximum amount of heat transfer with a minimum of space while maintaining outstanding dependability."

If your company requires nonferrous tubing for heat transfer—or any other purpose—talk to Wolverine Tube before placing your next order. Like York Division you'll find the kind of quality and dependability that meets your highest expectations. Write, too, for your copy of the Wolverine Tubemanship Book.

WOLVERINE TUBE
DIVISION OF
Calumet & Hecla, Inc.
DEPT. B, 17246 SOUTHFIELD RD., ALLEN PARK, MICH.
Manufacturers of Quality Controlled Tubing

J-6761

PLANTS IN DETROIT, MICHIGAN AND DECATUR, ALABAMA • SALES OFFICES IN PRINCIPAL CITIES

Former 'Factory Experts' Try Their Methods--

(Continued from preceding page)

"Super-Metic C," in a straight line with "S" meaning start, "M" meaning main or run, and "C" meaning common.

A small matter perhaps, but in keeping with the firm's desire to do a professional job is the fact "we don't cut the wires to a condenser fan motor if we have to remove it," Heathman adds. "We take the time to remove the wires at the terminal."

The shop, which is completely air conditioned for the benefit of employe efficiency (and it also impresses customers), is divided into two main sections.

A 17 by 40-ft. section fitted with an overhead garage type door is used primarily for the installation and repair of automobile air conditioners. Along one wall there's a refrigerant charging stand and a work bench for heavy repairs.

Directly behind this area is a DeVilbiss paint spray booth. A section of roller conveyor assists in moving equipment in and out of the booth, and turntables are provided for the units or equipment being sprayed.

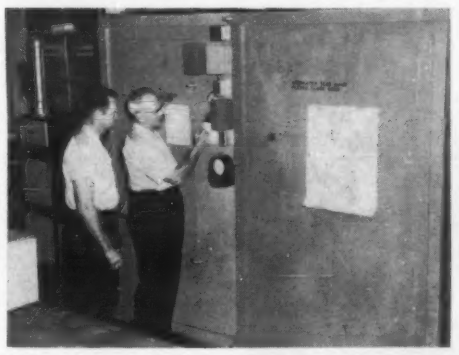
Repairs on unitary equipment are performed in a room 23 by 50 ft. in size. Down the center run two rows of benches 20 in. high by 32 in. wide with a total length of 60 ft. Equipment being checked and repaired is placed on these benches.

Height of 20 in. for these benches is level with the bed of a standard pick-up truck when it's backed up to the door. A 7-ft. long bench section of the same height is fitted with casters. Thus, a refrigerator or freezer, for example, can be easily transferred from the truck to the movable bench and then shifted from the movable section to the stationary benches.

This arrangement obviously minimizes lifting, and it also brings the equipment up to a more convenient height for work.

Against one wall of this section are 55 large storage bins in tiers which are primarily designed for window units. Each bin is numbered so that individual parts removed from a unit for repair can be assigned the same bin number, thus assuring that the right part goes back on the right unit.

At the rear of this section there's a large wash bench. This is fitted up so that either plain city water can be used as it comes from the tap or be heated, or so that various cleaning solutions can be added to the water. When the cleaning solutions are being used, the water is recirculated.



INSULATED test room in shop permits an accurate check of equipment performance and capacity. Here Carlton Clark (l.) and Chas. M. Heathman note some running time and temperature figures during a test.

A special cleaning nozzle was devised that lets the worked add a jet of compressed air at 120 p.s.i. to the water stream, primarily to force dirt off coils.

Also in this area is a "system cleaner" which circulates refrigerant through complete systems or components to clean them thoroughly, which is so necessary following a burn-out.

Another unusual feature is a test room to check the performance of such things as window units and egg coolers. There are actually two rooms involved, of course, one for the condenser side and the other for the evaporator. Condenser section is held at an ambient of 95° to 100° F. by means of a thermostatically controlled circulating fan.

Evaporator section, which is insulated with 4 in. of glass fiber, has a 3,000-watt "dairy parlor" electric heater controlled by a zone thermostat to provide a measurable load on the unit being tested.

A temperature recorder is provided for the evaporator section, and electric clocks give a record of the running time of both the unit under test and the electric heater.

In conducting a test, the unit thermostat is usually set as low as possible so it will run constantly and the heater thermostat is set for the space temperature desired.

After the system has stabilized at the desired temperature, a comparison of the unit and heater "on" times will show the approximate capacity in B.t.u. of the unit under test as the result of the conventional formula:

$$\frac{\text{Heater time}}{\text{Unit time}} \times 3.4 \times 3,000$$

Not every piece of equipment that comes into the Heathman-Clark shop for repair is put through this test, but these facilities are extremely useful in many instances for checking out units of various types.

Some Tools Not Usually Found In Repair Shop

In addition to the tools and equipment usually to be found in such a repair shop, this firm also has such things as a 9-in. Delta radial arm saw ("drafted" from Heathman's hobby workshop), crate banding equipment, and a hydraulic capillary tube "deplugger."

The latter, which is hand-operated and uses refrigeration type oil, creates up to 3,000 p.s.i. pressure. This will force obstructions out of capillary tubes and solve some problems.

The power saw might seem out of place in a refrigeration repair shop, but it's proved very useful, according to Heathman.

"We save all the lumber and crating material that comes in. Then with the saw we can build our own professional-looking crates," he explains. "Also, during slack periods, we use this lumber and saw to build things we need in the shop or office."

(To Be Continued)

The next section of this article will deal with some of the business methods, advertising, record keeping ideas of this firm.

now with ALL COPPER WATER CHANNELS

Shell and Tube CONDENSERS

HAS ALL THESE FEATURES:

- CLEANABLE
- U.L. LISTED or A.S.M.E. TAGGED
- ¾ TO 15 TON CAPACITY
- SIMPLIFIED and READABLE CAPACITY CHARTS

STANDARD

Assured Dependable Performance Serves You Better!

Standard Condensers are widely known for fine performance and supreme dependability.

Manufacturers of
Liquid Receivers, Adjustable Capillary Valves, Shell and Tube, Shell and Coil, Counterflow and Vertical Condensers.

STANDARD REFRIGERATION CO.

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National Distributor for
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Committee Lays Plans for 30th Annual NWAHACA Short Courses In Early 1961

CLEVELAND — Growing national emphasis is being placed on the need for higher education to prepare America for the "challenge of tomorrow."

Yet, though this is a current trend, it is not a new idea to the mentors of the heating and air conditioning industry, who have been stewarding this concept for the past 30 years, the National Warm Air Heating & Air Conditioning Association pointed out recently.

Emphasis was placed on this impressive fact when the association's Short Course Committee met in Cleveland recently to chart plans for this industry's 30th annual series of college short courses to be conducted early in 1961.

Leading the committee, which met in a two-day session at Cleveland's Hotel Statler-Hilton, was Lorin G. Miller, dean emeritus of Michigan State university and chairman of the Application Engineering Council, who officiated as acting chairman for the group. He is one of the pioneering founders of the Short Course Program.

The first Warm Air Heating Short Course was conducted at the then-named Michigan State college in 1931 and has continued as an annual event every year since then, with the exception of one war-time year when restrictions on travel prevented its being conducted.

Serving on the committee with Dean Miller, it was noted, are such outstanding men as Prof. Marvin Gould, Iowa State university; Prof. Robert R. Irwin, Oklahoma State university; Robert L. Loetscher, University of Wisconsin; Prof. Frederick Morse, Purdue university; Prof. Charles H. Pesterfield, Michigan State; and Prof. Thomas A. Wright, Penn State university.

Also on the committee are Benjamin P. Rhinefort, of The B. P. Rhinefort Co., Fort Worth, Texas; Benjamin Speaker, representing the Sheet Metal & Warm Air Contractors Association of Indiana, Inc.; and C. W. Van Tine, of the Van Tine Sheet Metal Co., Bartlesville, Okla.

Newly-appointed chairman for the Short Course Committee is Frank Harbin, Home Furnace Co., Holland, Mich. He was named following the close of the recent meeting.

The group meets semiannually for the purpose of laying the groundwork for the subjects to be taught in these Short Courses during the early months of each year.

The courses include sessions in system design, heat loss and heat gain calculations, and varied problems of heating and air conditioning installation technology. Text and reference material and NWAHACA's 15 manuals of system design and installation are other exploration areas for the Short Course.

Schools participating in this program last year included Purdue, Michigan State, North Carolina State college, University of Wisconsin, Oklahoma State, and Penn State.

NWAHACA Load Calculation Committee

MEMBERS of National Warm Air Heating & Air Conditioning Association's Air Conditioning and Load Calculation Committee "work through the break period" to find the right answer to a vital question. Scene is in Cleveland's Statler-Hilton hotel, where the group met recently for a two-day fact-gathering session. Attentively listening to one member's views are, left to right, John L. McManus, Heating & Refrigeration Co., Pittsburgh; Herbert G. Hays, Armstrong Furnace Co., Columbus, Ohio; G. R. Munger, Owen-Corning Fiberglass Corp., Toledo; Walter Weiss, American Furnace Co., St. Louis; James T. Lawson (holding paper), administration manager of NWAHACA of Canada; Robert Hoehne, Mueller Climatrol, Milwaukee; Donald E. Perry (standing, rear left), Carrier Corp., Syracuse, N. Y.; and, at right, Robert J. Evans, A. O. Smith Corp., Kankakee, Ill. This group was assembled to determine the revision needs of Manuals 3 and 11 of the NWAHACA' 15-manual library.

Local Councils Have Doubled In Past Year, BHC Director Reports

NEW YORK CITY — Local Better Heating-Cooling Councils promoting hydronic heating and cooling have doubled in number during the past year, Franklin Greene, executive director and secretary of national BHC, announced recently.

He said there are now eight fully-operating local groups.

His announcement was made in connection with the recent launching of the promotional program of the reorganized Delaware Valley Better Heating-Cooling Council at an all-industry meeting in Philadelphia.

In May of 1959, Greene pointed out, there were active BHC groups in Chicago, Cleveland, Milwaukee, and Greater New York City. Today, the BHC local council network also includes active groups in Delaware Valley, Puget Sound (Seattle-Tacoma), Detroit, and Baltimore. Two more councils are in process of formation now.

Elected to head up the DVBHC are the following:

David Madsen, Madsen Heating Co., president; Leo Lampone, Philadelphia Plumbing Supply, vice president; Philip R. Stockwell, Weil-McLain Co., secretary-treasurer; Walter Ford, Henry Ford Co.; Wilmer Watson, Wilmer Watson Co.; Bernard Gross, L. B. Orlowitz Co.; Conrad Muhly, Conrad Muhly Co.; W. T. Reed, American-Standard; Charles Lowrey, Federal Boiler Co.

Now Gas cooling with BRYANT!

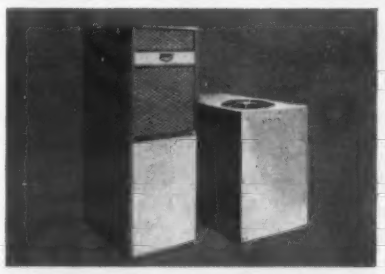
WATCH customers' favorable reactions when you explain the new Bryant Deluxe Gas Air Conditioner and its control over the weather. When they find out it's Gas . . . and that just one control switches from winter heating to summer air conditioning . . . you'll be doing more business than ever.

One of the big plus-benefits that helps sell this system is that the cooling unit can be added to the Bryant Gas furnace later on, and still the homeowner will enjoy the same easy-adjustment and economy advantages.

Customers have come to know that Gas is their most dependable home servant . . . in all kinds of weather. And that Gas is economical to install and to operate. There is nothing to wear out or make noise in a Gas flame.

Nothing heats, cools and conditions air like Gas!

AMERICAN GAS ASSOCIATION



EASY INSTALLATION. The compact Bryant Gas furnace fits handily into closet-size floor space. The Bryant cooling unit goes outdoors. No water tower, no refrigerant piping. No high amperage wiring . . . because it's Gas!

EASY REMODELING. The Bryant furnace is specifically designed for add-on Gas cooling —an extra selling feature for your customers. Gas provides the economical way to have *whole-house, all year* air conditioning on both existing homes or new construction.

"FRESH-AIR" CIRCULATION, WINTER OR SUMMER. Bryant Gas heating provides an even flow of warm air, responding instantly to temperature changes. And Bryant Gas extracts pollen, and moisture. Both help you sell . . . *because they're Gas!*

ONLY GAS does so much more...for so much less!

New F. W. Dwyer Plant Will Be 2½ Times Size of Present Quarters

MICHIGAN CITY, Ind. — F. W. Dwyer Mfg. Co., instrument manufacturer primarily concerned with low differential pressure gauges and controls, announced the start of construction on its new headquarters and plant here.

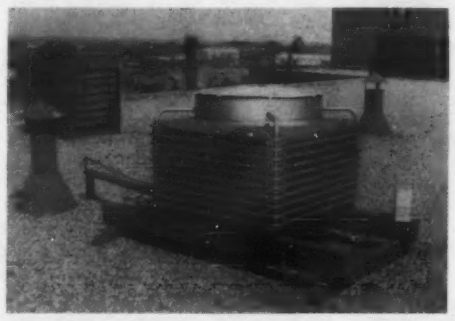
"Steadily increasing demands for the company's products have created a need for greatly enlarged production facilities along with new equipment and the latest in production methods," it was stated.

"Laboratory and engineering facilities have also been expanded to keep pace with the constantly growing Dwyer research and development program, an activity which has played an important role in the company's rapid growth."

The new Dwyer building, scheduled for completion by Aug. 1, 1960, is under construction on a 30-acre site located on the northeast edge of Michigan City. Office and manufacturing areas will total over 23,000 sq. ft., approximately 2½ times larger than the company's present plant at Woodland and Greenwood in the same community.

REPRINTS
SELLING FOR PROFIT.
By Frank Klein—Only $1.00 ea. Clip this ad and mail with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

Use of Aluminized Steel Expanding For Air Conditioning, Heating



THIS AIR CONDITIONING condensing unit, made of aluminized steel type 2 has been exposed on the roof of a commercial building for a number of years and shows no sign of rust.

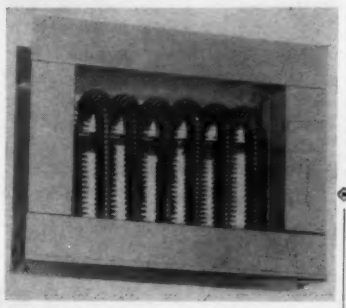
MIDDLETOWN, Ohio—Heating-cooling manufacturers are finding increased uses for aluminized steel in everything from furnace heat exchangers, to air conditioners, according to Armco Steel Corp. here.

"Outstanding resistance to atmospheric corrosion for Type 2 aluminized steel and outstanding heat and corrosion resistance for Type 1," are claimed by the company.

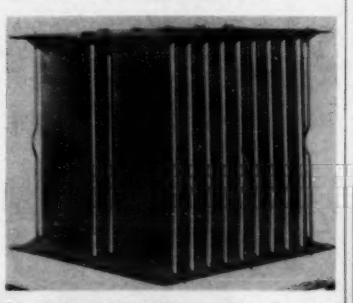
Both types may be fabricated and handled by all standard production procedures, Armco states. Type 1, for example, "will withstand moderate forming, drawing, and spinning operations without flaking or peeling the coating or damage to the base metal. The material can be bent 180°, cold, over a diameter equal to twice its own thickness without damage to the coating."

Type 2 will withstand moderate brake or roll-forming. It can be spun or embossed, but it is not suitable for drawing operations. Both types can be welded by conventional techniques.

Aluminized steel is prepared by hot-dipping. Type 1 has approximately 0.5 ounce of aluminum per square foot, resulting in a coating thickness of about 0.001, "about as thick as the standard galvanized coating," according to the company. Type 2 has about one ounce of aluminum per square foot, resulting in a coating about twice as thick as normal galvanized.



TERMINAL BOX and frame of this fin tube duct heater are made of heavy-gauge die-formed aluminized steel type 1 for resistance to heat and corrosion.



IN HEAT EXCHANGER assembly for gas-fired unit heater, aluminized steel type 1 resists oxidation at elevated temperatures.

William Schmidt To Design Amana '61 Product Lines

AMANA, Iowa—Amana Refrigeration, Inc. announced that it has retained the services of William M. Schmidt Associates of Detroit for the appearance design of its product line.

A company official said Schmidt Associates already is engaged in design work on Amana's 1961 line, including all freezer plus refrigerator, upright freezer, and air conditioner models.

William M. Schmidt, president, established his industrial designing firm in March, 1959. He was associated with the automotive industry as a stylist from 1941 to 1959.

First Ebco Expansion To Add 50,000 Sq. Ft. To Columbus Plant

COLUMBUS, Ohio — In this its 50th anniversary year, The Ebco Mfg. Co. announces the first major expansion of its plant facility.

In 1956, the company noted, *Factory* magazine rated the facility as one of the top ten plants in the nation. Both plant and general offices were originally designed with an eye towards future expansion.

Ebco specializes in manufacturing refrigeration appliances. "Oasis" and Kelvinator water coolers and dehumidifiers are Ebco trade name products.

The entire north end of the present plant facility will be extended by 125 ft. This will provide an additional 50,000 sq. ft. and bring total footage from 240,000 to 290,000 sq. ft.

The addition will provide for extension of prodution lines, relocation of some departments, and additional warehousing of completed products, Two additional trucking docks will bring total to six, expediting shipments.

Completion is slated for early fall of 1960.

General Chemical Plans To Double Research Facilities

NEW YORK CITY — Allied Chemical announced a major research expansion which will more than double the laboratory facilities of its General Chemical Div. near Morristown, N. J.

The expansion is another step in Allied's long-range development of its Morristown center where the corporation's Central Research Laboratory is also located.

Construction is expected to be completed in the last quarter of 1961. With this additional space almost 500 research scientists and supporting staffs will eventually be accommodated, according to the announcement.

Stepped-up research by General Chemical Div. on fluorine polymers, thermally stable fluids, and refractory metals, along with consolidation of technical services and petrochemical research groups dictates the expansion at this time, Frank J. French, division president said.

NEW

ENGINEERED SPECIFICALLY for commercial refrigerated applications

NATIONAL LOCK EDGEMOUNTED LATCH

Latch has roller bolt action. Similar action in other latches has been field tested for the last twenty years. It assures easy opening and positive closing . . . using nylon roller for quiet operation. Latch mounts on either right or left hand doors. Available with or without key locking. Surface-mounted strike is adjustable two ways.

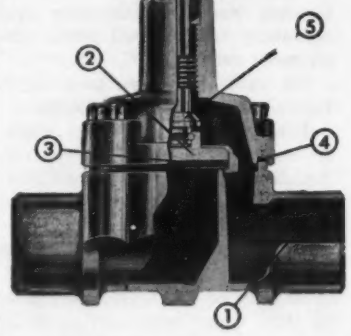
Write For Information

NATIONAL LOCK COMPANY

INDUSTRIAL HARDWARE DIVISION • ROCKFORD, ILLINOIS

● FULL FLOW
✱ SELF ADJUSTING
● POSITIVE SHUT-OFF
✱ LEAK-LOK BONNET SEAL
● REPACKS IN USE
✱ TEMPERATURE PROOF

KEROTEST PACKED GLOBE VALVES



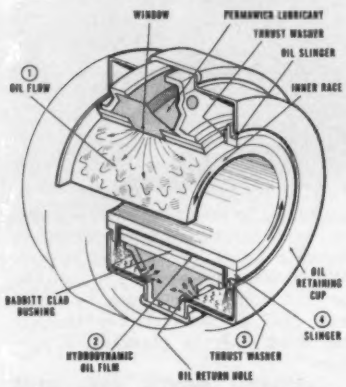
"Packed" with quality and of rugged brass construction, these valves are ideal for refrigeration and air conditioning systems, oxygen (degreased), nitrogen, compressed air and liquified petroleum gases. Features: 1. Designed for full flow. 2. Floating disc for self-adjustment. 3. Quick seating disc for ease of operation. 4. Leakproof with exclusive gasketing. 5. Repacks under pressure with positive back seating. Maximum operating pressure 500 p.s.i.—maximum temperature 200° F. See your Kerotest wholesaler.

R12 Series ⅞"-2⅛" Forged Brass
R10 Series 2⅜"-4⅛" Cast Brass

KEROTEST

KEROTEST MANUFACTURING CO.
2502 Liberty Avenue
Pittsburgh 22, Pa.

Hy-Film Bearings Have 20,000-Hour Life



OPERATION OF hydrodynamic oil film: 1. Oil is drawn from reservoir through bearing window. 2. Rotation of inner race generates hydrodynamic oil film supporting inner race without metal-to-metal contact. 3. Oil forced to bearing ends lubricates thrust washer. 4. Oil is slung to retaining cup from which it is reabsorbed in return hole.

● A "revolutionary" new family of bearings said to combine the design advantages of sleeve and ball bearings has been announced by the Tann Bearings Co., division of Tann Corp., Dept. AH&RN, 3750 E. Outer Dr., Detroit 34.

The Tann "Hy-Film" bearing is a line of packaged, off-the-shelf bearings, interchangeable with ball bearings in bore and shaft requirements, it was stated.

"Unique features of the new bearing include a base life of 20,000 hours, a lifetime recirculatory oiling system, and a hydrodynamic oil film between inner race and bushing which supports the weight of the shaft," the company said.

"There is no metal-to-metal contact at any point.

"The Hy-Film bearing is virtually vibration-free and noise-free, is resistant to humid and gritty atmospheres, and does not leak oil. Recommended operating temperatures range from -25° to 200° F."

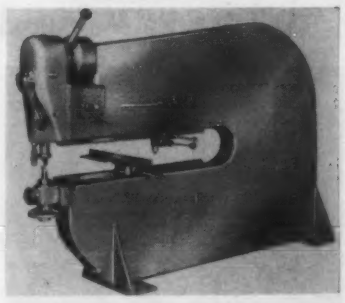
Auxiliary Wall Fountain Gives Extra Outlet

● An auxiliary wall fountain, to match the basic design and color of its line of self-contained drinking water coolers, is currently being offered by Temprite Products Corp., E. Maple Rd., Birmingham, Mich.

Introduced as wall-mounted fountain, No. WF-4000, it will serve as an extra cool water outlet for busy locations; or it may be mounted on a wall opposite the self-contained cooler, in an adjoining room, the company said. Easily mounted at any desired lower height, it is suited as a companion fountain where children are to be served.

Formed in heavy-gauge steel, the fountain is finished in mist grey enamel to match Temprite's self-contained coolers. The basin top, which measures 12 in. square, is polished stainless steel. Drain connections are provided for standard size trap. Over-all height is 11½ in.

Machine Tool Serves For Short Run Output



● The Swedish GV factory has released information about its "Metal Worker," type "Medium," a sheet and plate working machine with an edge cutting capacity in mild steel of 15/64 in., according to Homestrand Machine Tool Corp., Dept. AH&RN, 392 West Putnam Ave., Greenwich, Conn.

The Medium, which has a throat capacity of 43 in., is useful in engineering and R&D departments and for short run production in the fields of air conditioning, heating, and ventilating, among others, the company said. A full line of tooling is available for straight cutting, circle cutting, figure cutting, beading, folding, slot cutting, louvering, nibbling, planishing, and flanging.

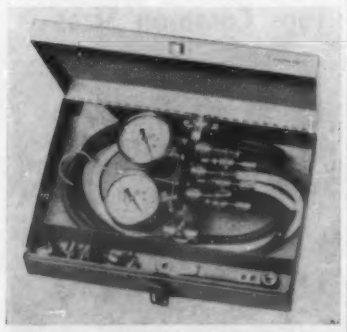
More details on the products described on these pages may be obtained by writing the manufacturer at the address given in each story.

Condensing Unit Has Low Silhouette

● Addition of the "LSCU" (low silhouette condensing unit) to its air conditioning product family was announced by Dunham-Bush, Inc., Dept. AH&RN, 179 South St., West Hartford, Conn.

The LSCU is available in five basic sizes, 10 through 30 tons, specifically designed for those air conditioning applications requiring the use of water savers. The LSCU is basically a standard "LSBC" low silhouette blower condenser, complete with a "Brunner-Metic" motor-compressor, Heat-X liquid receiver, electrical controls, and refrigeration accessories mounted in a specially designed section for field attachment or remote installation.

"These units can be located anywhere without regard to prevailing winds," the company stated.



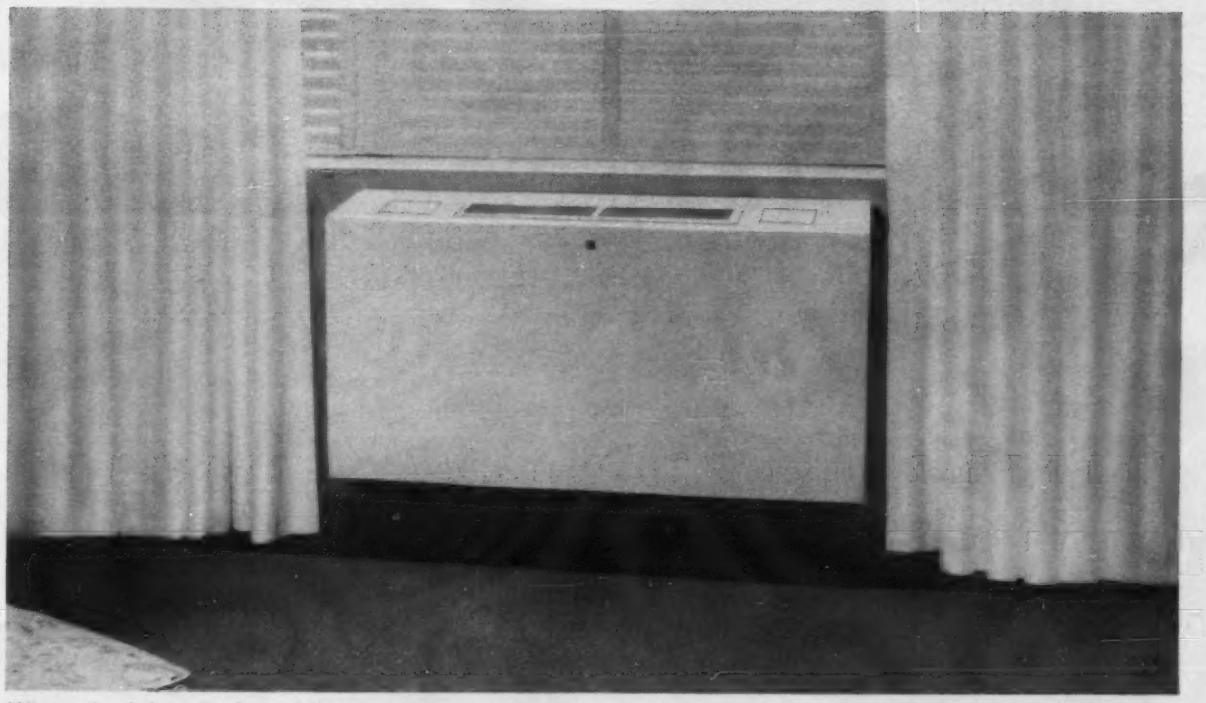
Metal Carrying Case For Charging Unit

● Production of a new metal carrying case for carrying charging and testing units has been announced by Madden Brass Products Co., Dept. AH&RN, 700 Sheffer Rd., P. O. Box 444, Aurora, Ill.

The new case protects units from damage when not in use, or when being carried from one place to another, it was noted. It features a compartment for accessory fittings, and a carrying handle.

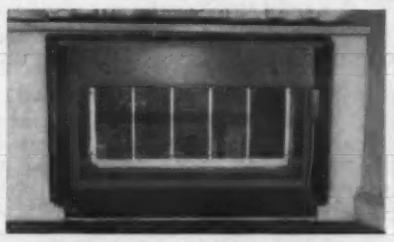
Complete unit includes the sturdy new metal case, gauges, manifold bar with handwheels, handy hanging hook, handy hose holder, and one set of Madden color coded charging lines.

THIS AMERICAN-STANDARD
THROUGH-THE-WALL UNIT
HEATS AND COOLS



When the job calls for adding cooling to an existing building, use the Type 40 Remotaire. This year 'round heating-cooling unit is ideal for modernizing big buildings. Old radiators are replaced by an attractive under-window unit which is installed through the wall. It connects to existing steam or hot water heating piping, or uses built-in electric heating coils. A self-contained cooling circuit eliminates the need for central cooling plant and tower. Featuring individual-room unit control, Type 40 units can be easily installed in a room, suite or floor at a time to fit customers' budgets. **For information, see your American-Standard representative or write American-Standard, Plumbing and Heating Division, 40 West 40 Street, New York 18, New York.**

Hole is cut through the wall.


Sleeve inserted, louver attached.

Heating-cooling chassis slides in.

American-Standard and Standard® are trademarks of American Radiator & Standard Sanitary Corporation

AMERICAN-Standard
PLUMBING AND HEATING DIVISION

Self-Service Merchandiser for Packaged Ice

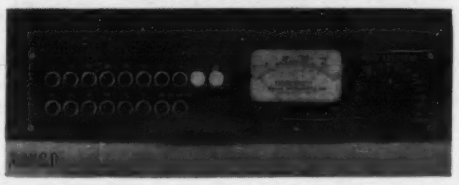
● Two ice merchandising units especially adapted for storage and sale of packaged ice are being manufactured by Starrett Refrigeration Co., Inc., Dept. AH&RN, 4518 West Ohio Ave., Tampa 3, Fla.

These are models IM-24 and IM-38, with a capacity of 60 and 100 10-lb. packages, respectively. Space used by IM-24 is 3 ft. by 3 ft., for IM-38 it is 3 ft. by 4 ft.

These units are not coin operated but do provide self-service for walk-in customers in line with the policies of drive-in type markets, the company pointed out. A ¼-hp. Tecumseh compressor holds temperature at about 25° F.

System Monitors Temperatures In Many Areas

● Its new "Type-Z Temperature-Monitor System" is designed to provide centralized observation of ambient temperatures in a multiplicity of areas operated by a single organization, according to Royco Instruments, Inc., Dept. AH&RN, 365 San Antonio Rd., Mountain View, Calif. The company said the system "offers advantages for refrigerated and air conditioned buildings — especially low temperature food-storage facilities. There is essentially no practical limitation to the number of areas which can be monitored in a single installation.



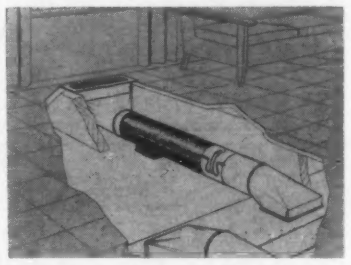
Williamson Puts Electric Heater In Ducts

● New residential and commercial electric heating systems using convected air, through ductwork and an air handling device, have been developed by the Williamson Co., Dept. AH&RN (E.H.), 3500 Madison Rd., Cincinnati 9. Summer air conditioning may be incorporated at installation time or anytime thereafter, it was pointed out.

The new systems "combine the advantages of instant electric heat with humidity control, filtration, and air movement," the company said. "Individual room temperature control is also possible.

"Individual electric heating elements are placed by Williamson at the ends of the air distribution branches, so that the benefits of forced air circulation are obtained without loss of heat in the duct or pipe system. At the same time, the heating elements may be controlled individually by thermostats in each room, allowing adjustment for room use or location, or the system may be operated from a central thermostat.

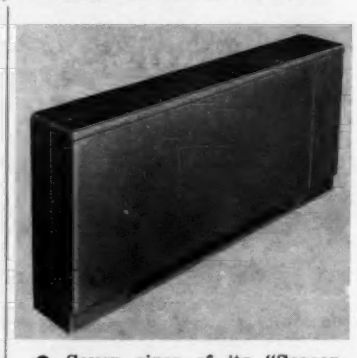
"Williamson electric heat systems utilize horizontal or vertical blower units, with built-in air filter, which have provisions for easy addition of a cooling and dehumidifying coil. The horizontal



unit may be installed on attic joists or floor; suspended from ceiling or beneath joists; or in crawl spaces. Williamson Console, Companion, or self-contained Condaire units can also be selected for the air handling unit in planning a system."

Individual electric heat units offered by Williamson in the new systems range from 4,700 to 15,450 B.t.u., with four different capacities available.

Remote Room Units Made In Seven Sizes

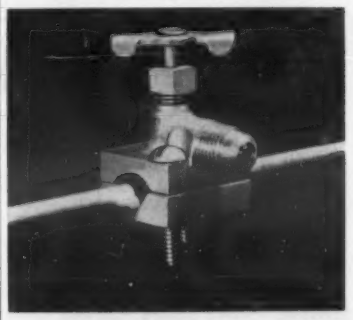


● Seven sizes of its "Seasonmakers" with capacities ranging from 220 to 1,240 c.f.m. are now offered by McQuay, Inc., Dept. AH&RN, 1600 E. Broadway St., Minneapolis 13.

The remote, individual room Seasonmakers are "only 8½ in. thin and 25 in. high or deep, are of compact, modern styling, and require a minimum of installation space," the company said. "They are especially designed for apartments, motels, hotels, offices, hospitals, or any installation utilizing central station heating or cooling."

The Seasonmakers are made in four models—floor, basic, hideaway, and ceiling—each in seven sizes with capacities of 220, 330, 440, 520, 640, 940, and 1,240 c.f.m.

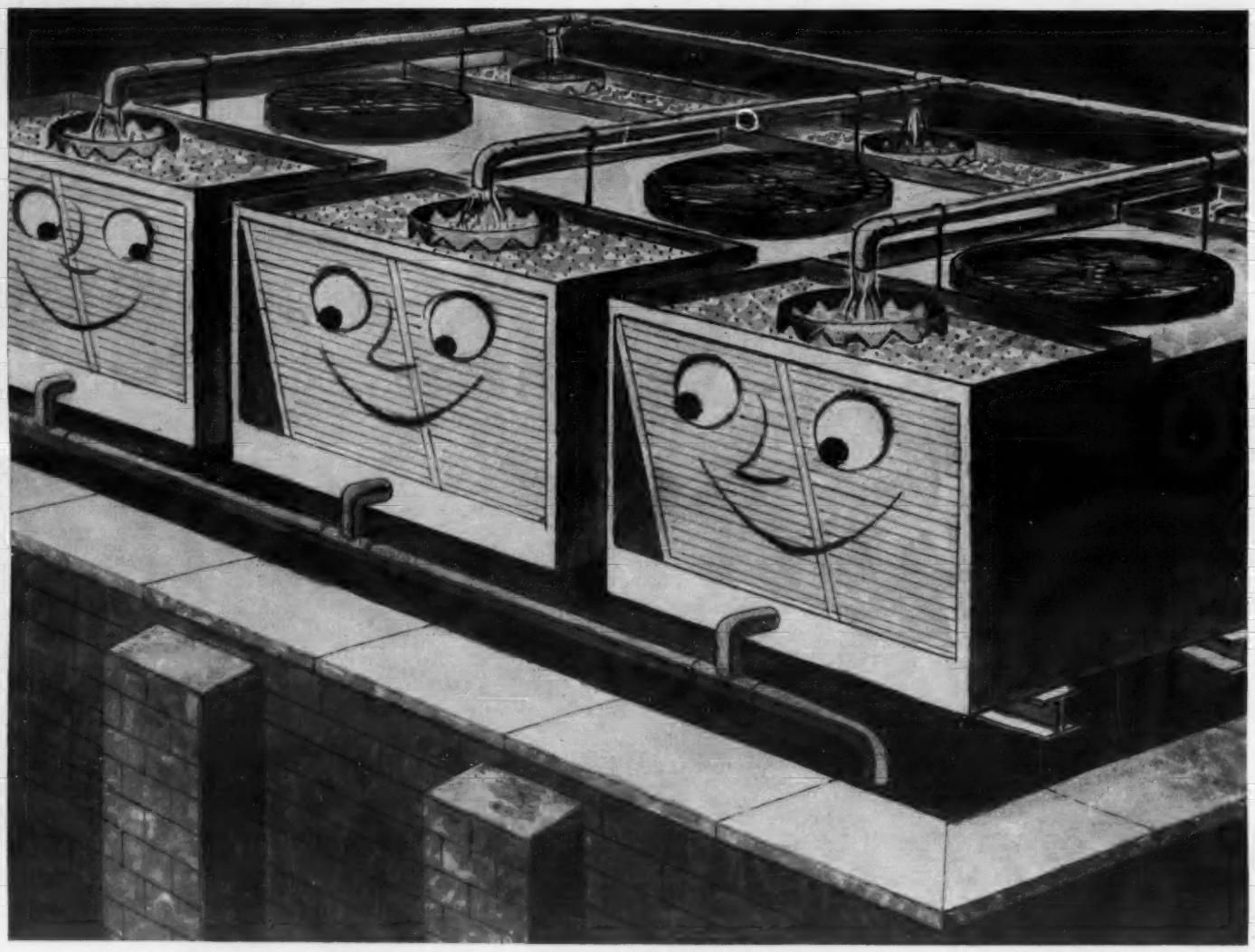
Line Piercing Valve Taps Common Sizes



● "Tapzall"—a universal line piercing valve that taps all copper tubing sizes from 3/16 through ⅝ in.—is now marketed by Superior Valve & Fittings Co., Dept. AHRN, 1509 West Liberty Ave., Pittsburgh 26.

"Designed as a permanent access valve on hermetic units, one Tapzall valve successfully taps all common sizes of refrigerant lines," the company stated. "Its all-brass construction is satisfactory for use on all common refrigerants.

"The Tapzall straddles the tubing and clamps securely when two brass screws are tightened. With a key-type handwheel, there is ample room to install and operate the Tapzall from the top of the valve."



How to cut costs on a 450-ton cooling job:

Use three Halstead & Mitchell 150-ton cooling towers!

H&M MODEL EC-150 COOLING TOWER WITH 10-GAUGE STEEL CABINET

How can three units be cheaper than one? Simple. Halstead & Mitchell packaged cooling towers come to you completely assembled and therefore less expensive to install. They operate at lower cost because there can be no wasted capacity; with step-control, you get capacity as you need it.

Furthermore, with "modular" units, you can place each tower near the equipment it's to be used with. This gives you closer control of water temperatures—another economy factor. Then, too, if one tower must be shut down, you can continue to operate the others.

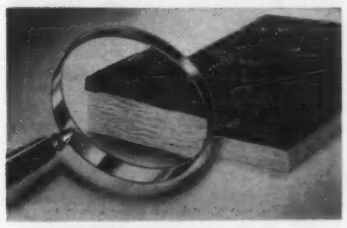
The advantages go on and on: lower silhouette, lower rigging costs, and utmost flexibility—towers can be easily moved or supplemented as requirements change. And, like all H&M towers, these carry the exclusive 20-Year Guarantee on the wetted deck against failure due to fungus attack or rotting.

Contact your Halstead & Mitchell distributor for complete information on H&M cooling towers in 3- to 150-ton capacities. Or write Halstead & Mitchell Co., Bessemer Bldg., Pittsburgh 22, Pa.

HM Halstead & Mitchell

Cooling Towers • Water-Cooled Condensers • Air-Cooled Condensers • Finned Coil Products • Air-Handlers

Dual Density Insulation for Duct Liner



● "Micro-Bar," a new fiber glass duct liner claimed to have an exceptionally low fire hazard rating and featuring "dual density" construction for better performance in air conditioning and heating duct systems, is being introduced by the Industrial Insulations Div., Johns-Manville, Dept. AHRN, 22 East 40th St., New York City 16.

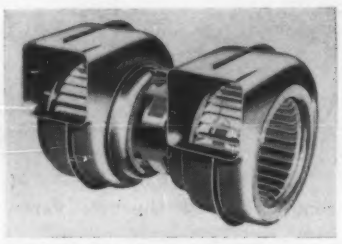
"The liner, in ½, 1, 1½, and 2-in. thicknesses, is a resilient, semi-rigid insulation blanket of strong, fine glass fibers bonded by a thermosetting resin," the company said. "It is made up of two different densities of insulation, each serving an essential function.

"The black colored surface is made of heavy density fiber glass for resistance to the high air velocities of up to 5,000 f.p.m. encountered in modern duct systems. Its toughness makes it easy to form integral nosings at the leading edges when the material is being installed in ducts."

The new type nosing, made of the material itself, is secured with the same type of pin or fastener used to hold the balance of the insulation in position.

"Underneath the heavy density surface is the light density portion, amber in color, which provides better sound absorption and overall thermal performance," it was stated. "The ½-in. material has a noise reduction coefficient of .60, the 1-in. material has a .80 NRC."

The material, in 24, 36, 46½, and 48-in. widths, is packaged in 50 to 200-ft. rolls.



Small Redmond Blower Delivers 800 Cfm

● Air deliveries of 800 c.f.m. are available in the new Redmond Type AO blowers, it was announced by Redmond Co., Inc., Dept. AH&RN, Owosso, Mich.

The self-contained power packages "feature high air deliveries in low cost units," the company stated. Type AO blowers are available in single and double blowers, 115 volts or 230 volts, 60 cycles. They are recommended for vending machines, heating, air conditioning, refrigeration, and appliances.

Line Tap Valves Have Integral Needle

● Said to incorporate six new features, two adjustable line tap valves have been introduced to the refrigeration and air conditioning industry by Watsco, Inc., Dept. AH&RN, 1021 E. 15th St., Hialeah, Fla.

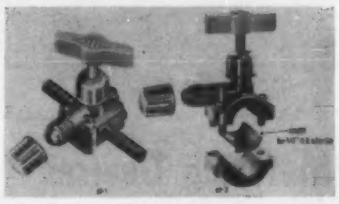
"Designed at the request of industry servicemen, the new Watsco AP-1 and AP-2 valves are easily attached to refrigerant lines for piercing the tube to provide a port for testing, charging, discharging, or purging," the company stated. "The new features are:

"1. A needle that cannot loosen and fall out. The needle is an integral part of the shaft.

"2. Attached to the shaft is a handle made of 'Delrin,' the new 'wonder' material by du Pont. The handle itself cannot be loosened, lost, or broken.

"3. For additional protection against leakage, each valve incorporates an additional sealing cap to fit over the charging port.

"4. The valves are attached to



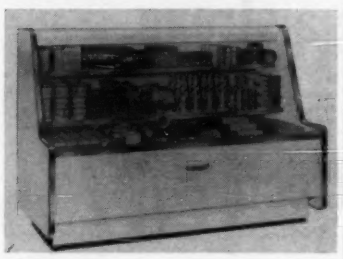
tubing from the top with Philips screws for easy installation.

"5. The valves are modern in design, completely smooth with no rough, unfinished edges.

"6. All sizes of tubing from 3/16 to ⅝ in. can be serviced with just these two valves; the AP-1 fitting 3/16 through ⅜ in. o.d. tubing, and the AP-2 utilizing an insert that allows conformation of ⅛ in. o.d. tubing true contour fitting. Remove the insert and the body of the AP-2 itself conforms to the exact dimension of ⅝ in. size.

"Both applications allow perfect sealing."

Dairy Case Offers Multi-Deck Display



● Introduction of a new all-purpose, multiple-deck display refrigerator "suitable for dairy products, delicatessen and other (long-profit) 'impulse' food items," was announced by Sherer-Gillett Co., Dept. AH&RN, Marshall, Mich.

The cabinet itself is 6 ft. long and with ends is 6 ft. 3 in. over-all. Completely self-contained, it is only necessary for connection to the power line to be placed in operation.

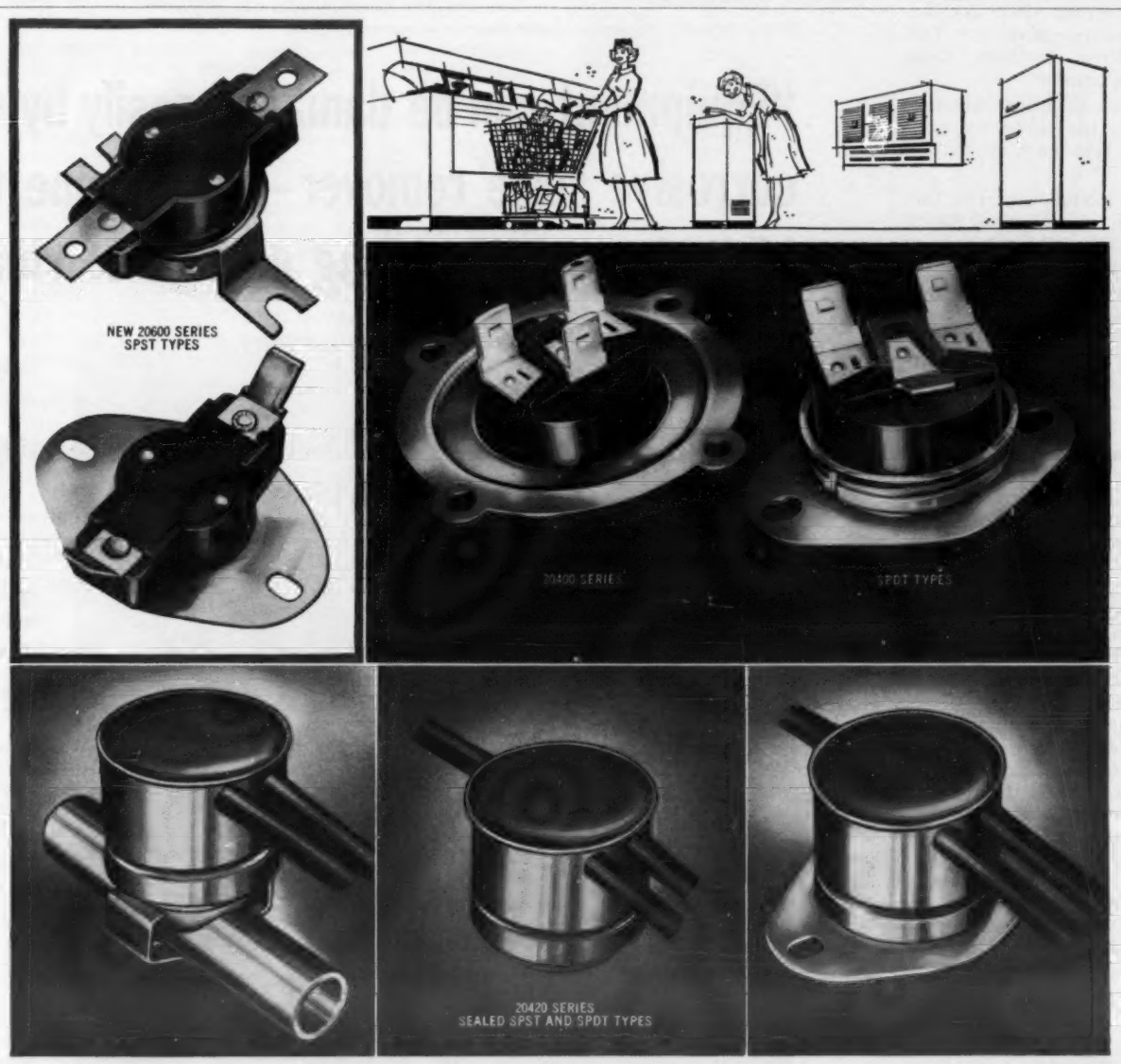
The new model 5706M provides 24.7 sq. ft. of refrigerated display, plus 8.5 sq. ft. of space for the showing of foods not requiring refrigeration or non-food items.

Kitchen Unit Has Magnetic Gasket Door

● A plastic inner door liner and a magnetic gasket door are two new features of the latest 30-in.-wide complete kitchen unit offered by King Refrigerator Corp., Dept. AH&RN, 76-02 Woodhaven Blvd., Glendale 27, L. I., N. Y.

According to the company, the magnetic door insures absolutely tight seal and saving on electricity, and the door liner with its three shelves for bottles and dairy products adds additional storage space to the "family-size" 5-cu. ft. refrigerator section.

The versatile model is 30 in. wide by 24 in. deep by 36 in. high, has two burners (gas or electric), a 17-in. stainless steel sink, a refrigerator and a freezer compartment for ice cubes and frozen foods.



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TECH CENTER

by Frank J. Versagi, Technical Editor

Metering Devices

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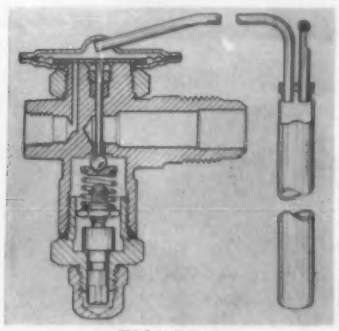

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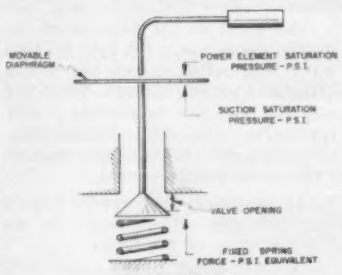
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Q Is there any way to avoid scale buildup?

A Yes. All water contains impurities in varying degree . . . either as suspended solids or as solids and gases in solution. The solids, of course, cause scale buildup, and the gases cause corrosion. "Virginia" Scale & Corrosion Inhibitor does an excellent job of keeping these impurities in suspension or solution, thus greatly retarding scale buildup in the system. It offers other advantages, too. As little as 2 to 4 parts per million in the water will take care of retarding scale and 25-50 parts per million will deposit a thin, protective film over all metal surfaces to exclude oxidation attack. And it has a neutralizing effect on weak acids formed by airborne gases. I might point out that the best time to use preventive treatment is immediately after cleaning a system. Just add the right amount of inhibitor to the sump water and check for proper bleed.

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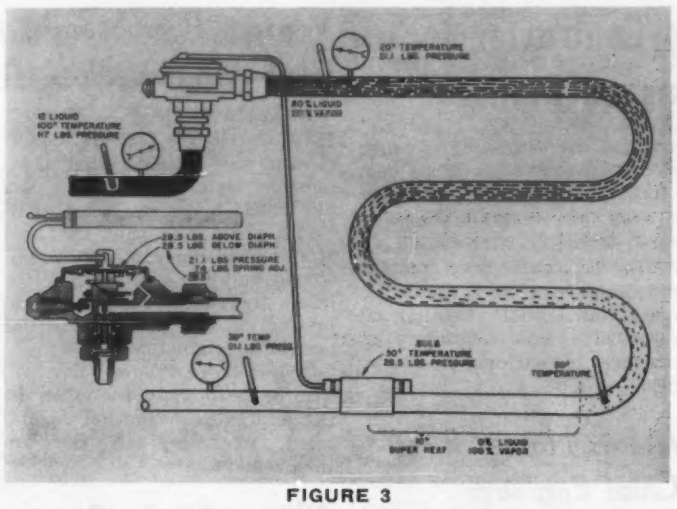

FIGURE 3

remote bulb will be 50° and the pressure within the power element will be the equilibrium pressure for 50°, or 47 p.s.i.

This 10 p.s.i. difference in pressure would tend to open the valve but for the spring which keeps the valve balanced. In this balanced position, the valve feeds just enough liquid to maintain vapor superheat at 10°.

If, for any reason, the temperature of the vapor passing the bulb increases, while the actual temperature back in the coil remains 40°, the valve will open to admit more liquid since the power element pressure would increase, too, and the unbalance would be greater than design. The unbalance would tend to compress the spring until it balanced the new pressure. But at this new balance point, more liquid would pass than before to keep up with the increased load.

So basic is this principle that it cannot be over-emphasized: **When a valve is adjusted to maintain a given superheat, the liquid refrigerant will all be vaporized before it reaches the evaporator outlet. The last bit of the coil, the dry part, will superheat the vapor to the superheat point for which the valve is set. The valve will maintain this temperature differential, say 10°, no matter how high or how low the actual temperature goes.**

(Control manufacturers find that even servicemen who have worked with thermostatic expansion valves for years do not understand these basic points and therefore frequently improperly diagnose refrigerant flow problems.)

In practice, the superheat is set at the lowest value which will function. The ideal is to get as much liquid as possible in the coil without permitting any to enter the suction line or reach the compressor. If the superheat is set too high, this increases the length of dry coil and dry coil is not efficient as a cooling medium.

For any given setting of the TEV, pressure drop between the valve outlet and the coil outlet will cause the valve to reduce the liquid supply. One way to correct this is to reduce the superheat setting of the valve, although this may become impractical where the desired difference is only a couple degrees.

In coils with an appreciable pressure drop, the pressure on the inside of the TEV body will be higher than the pressure of the boiling refrigerant near the remote bulb. This differential acts to starve the coil, and a 10° superheat setting may result in a 15° superheat with a starved coil.

The recommended way to handle the problem caused by pressure drop in some coils is to employe an **external equalizer.** (See Fig. 5.)

A small tube connected to the suction line is tapped into the TEV so that the pressures are equal, and the valve will operate normally. The equalizer tube conducts the low side pressure to the flexible element—the diaphragm or bellows. Since both pressure and temperature are taken at the same point, superheat can be maintained without interference due to pressure drop.

When several evaporator coils —each with its own TEV—are on one compressor, the suction pressure at the compressor will be determined by the composite loads on all the coils, but only enough liquid will be fed each coil to maintain the superheat for which that valve is set.

During shutdown, it is possible that the remote bulb will warm up and the resultant power element pressure will open the valve. Refrigerant may flow to the coil where it will be on startup and from where it may slug to the compressor. Normal precaution against this is the insertion of a solenoid valve in front of the TEV. The solenoid closes when the compressor stops, preventing any liquid refrigerant from passing through the TEV during the off-cycle.

A TEV can "lose control" if its body is exposed to colder conditions than the bulb, for in this case all the refrigerant in the power element migrates to

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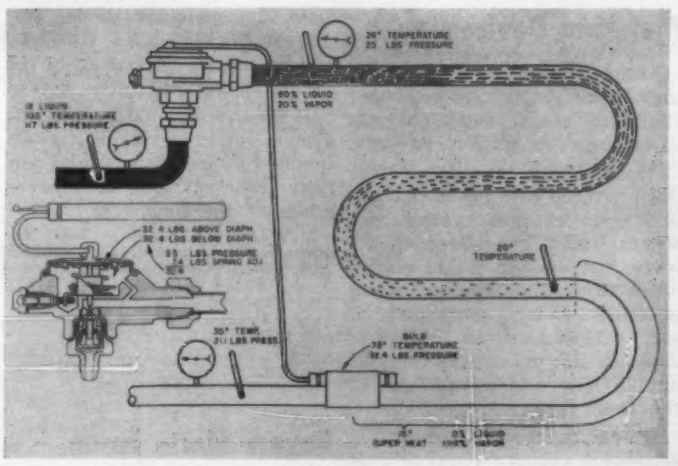

FIGURE 4

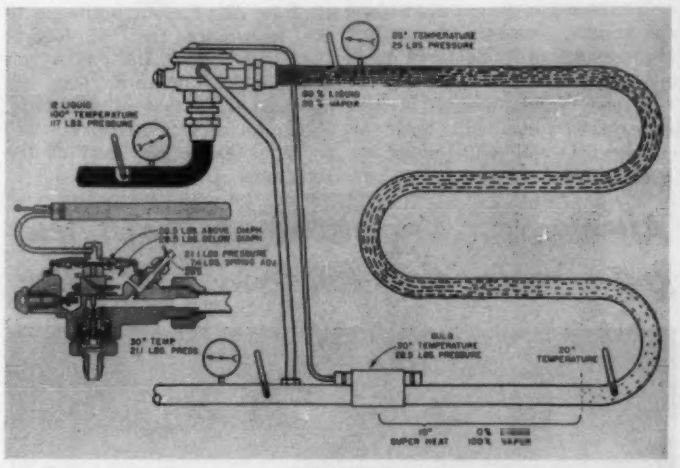

FIGURE 5

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Eliminates slow freeze, sticking cubes, cloudy ice with bad taste and odor. Safe to use—will not injure enamel or polished metal surfaces. For automatic cube or flake ice machines. Turn off machine—fill tray with warm water—use cleaner—flush out. That's all there is to it!

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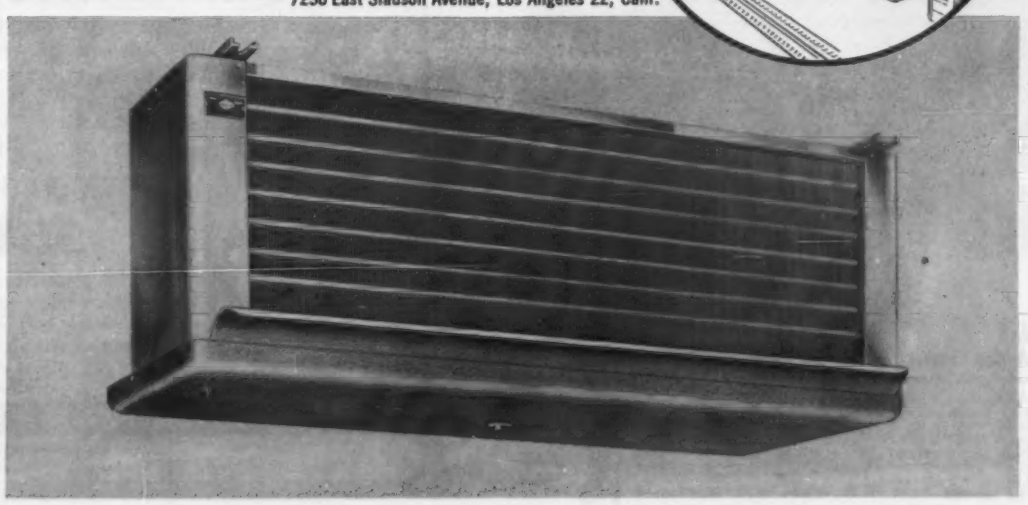

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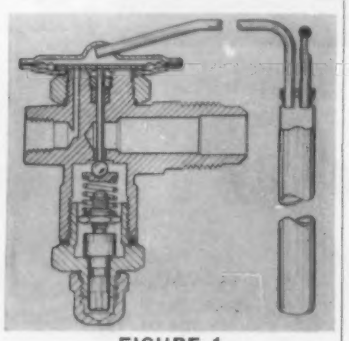

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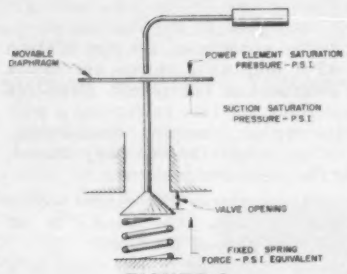
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A Easy—and safe for the operator as well as the equipment. It's a dry powder—so if you drop it, there's no broken glass, no acid splashing around, no danger of injury to anyone. Just shovel up the powder. Add it to the water and stir until the powder is dissolved. There are no noxious fumes that could endanger the operator, either.

Q Is there any way to avoid scale buildup?

A Yes. All water contains impurities in varying degree . . . either as suspended solids or as solids and gases in solution. The solids, of course, cause scale buildup, and the gases cause corrosion. "Virginia" Scale & Corrosion Inhibitor does an excellent job of keeping these impurities in suspension or solution, thus greatly retarding scale buildup in the system. It offers other advantages, too. As little as 2 to 4 parts per million in the water will take care of retarding scale and 25-50 parts per million will deposit a thin, protective film over all metal surfaces to exclude oxidation attack. And it has a neutralizing effect on weak acids formed by airborne gases. I might point out that the best time to use preventive treatment is immediately after cleaning a system. Just add the right amount of inhibitor to the sump water and check for proper bleed.

Full details on water treatment

Our folder "How to Turn Water into Money" gives all the facts on water treatment—preventive and remedial action. For a copy, write Refrigeration Division, VIRGINIA SMELTING COMPANY, 485 Jefferson St., West Norfolk, Va.

VIRGINIA® Chemicals

Water Treatment Chemicals • Esotoo • V-Meth-L • Can-O-Gas VascoCel • Presstite Tape • Permagum • Suniso Refrigeration Oils • National Sales Agent & Repacker for Du Pont's "Freon" Refrigerants.

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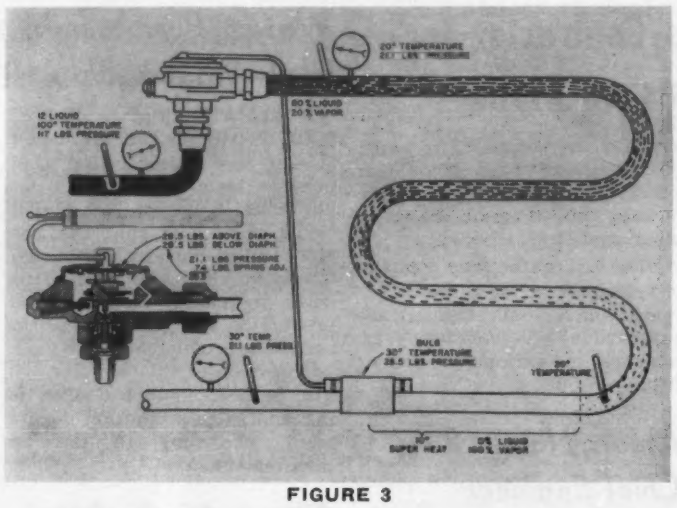


FIGURE 3

remote bulb will be 50° and the pressure within the power element will be the equilibrium pressure for 50°, or 47 p.s.i.

This 10 p.s.i. difference in pressure would tend to open the valve but for the spring which keeps the valve balanced. In this balanced position, the valve feeds just enough liquid to maintain vapor superheat at 10°.

If, for any reason, the temperature of the vapor passing the bulb increases, while the actual temperature back in the coil remains 40°, the valve will open to admit more liquid since the power element pressure would increase, too, and the unbalance would be greater than design. The unbalance would tend to compress the spring until it balanced the new pressure. But at this new balance point, more liquid would pass than before to keep up with the increased load.

So basic is this principle that it cannot be over-emphasized: **When a valve is adjusted to maintain a given superheat, the liquid refrigerant will all be vaporized before it reaches the evaporator outlet. The last bit of the coil, the dry part, will superheat the vapor to the superheat point for which the valve is set. The valve will maintain this temperature differential, say 10°, no matter how high or how low the actual temperature goes.**

(Control manufacturers find that even servicemen who have worked with thermostatic expansion valves for years do not understand these basic points and therefore frequently improperly diagnose refrigerant flow problems.)

In practice, the superheat is set at the lowest value which will function. The ideal is to get as much liquid as possible in the coil without permitting any to enter the suction line or reach the compressor. If the superheat is set too high, this increases the length of dry coil and dry coil is not efficient as a cooling medium.

For any given setting of the TEV, pressure drop between the valve outlet and the coil outlet will cause the valve to reduce the liquid supply. One way to correct this is to reduce the superheat setting of the valve, although this may become impractical where the desired difference is only a couple degrees.

In coils with an appreciable pressure drop, the pressure on the inside of the TEV body will be higher than the pressure of the boiling refrigerant near the remote bulb. This differential acts to starve the coil, and a 10° superheat setting may result in a 15° superheat with a starved coil.

The recommended way to handle the problem caused by pressure drop in some coils is to employe an **external equalizer.** (See Fig. 5.)

A small tube connected to the suction line is tapped into the TEV so that the pressures are equal, and the valve will operate normally. The equalizer tube conducts the low side pressure to the flexible element—the diaphragm or bellows. Since both pressure and temperature are taken at the same point, superheat can be maintained without interference due to pressure drop.

When several evaporator coils —each with its own TEV—are on one compressor, the suction pressure at the compressor will be determined by the composite loads on all the coils, but only enough liquid will be fed each coil to maintain the superheat for which that valve is set.

During shutdown, it is possible that the remote bulb will warm up and the resultant power element pressure will open the valve. Refrigerant may flow to the coil where it will be on startup and from where it may slug to the compressor. Normal precaution against this is the insertion of a solenoid valve in front of the TEV. The solenoid closes when the compressor stops, preventing any liquid refrigerant from passing through the TEV during the off-cycle.

A TEV can "lose control" if its body is exposed to colder conditions than the bulb, for in this case all the refrigerant in the power element migrates to

(Continued on next page)

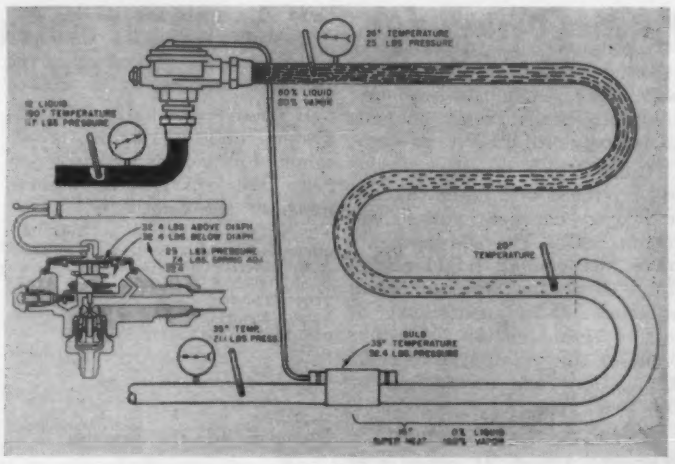


FIGURE 4

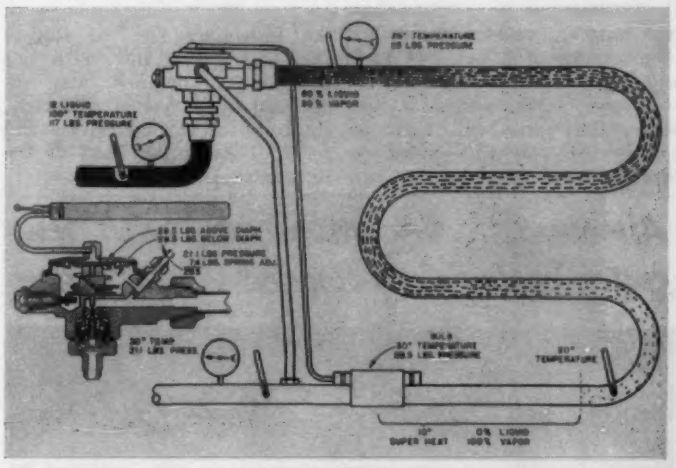
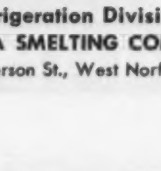


FIGURE 5

"VIRGINIA"

Water Treatment Chemicals



Solid Scale Remover

A 96% sulfamic acid dry formulation specially inhibited to reduce attack on metal surfaces. Empty into the water and stir. It goes to work instantly. Non-injurious to galvanized, dipped zinc, and aluminum water-cooled equipment when used as directed. Easy to use—no heavy glass jugs—no hazards from breakage. Destroys algal growths, too.

Liquid Scale Remover

Now in a shatterproof throwaway container—tough plastic liner and spout make pouring easy. No breakage, splash or drip. Ideal for thick scale. Has dissolving capacity 50% greater than that of similar cleaners. Well inhibited to prevent serious damage to metal. No noxious fumes —safe for the operator to use.

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Eliminates slow freeze, sticking cubes, cloudy ice with bad taste and odor. Safe to use—will not injure enamel or polished metal surfaces. For automatic cube or flake ice machines. Turn off machine—fill tray with warm water—use cleaner—flush out. That's all there is to it!

Also—"Virginia" Scale & Corrosion Inhibitor, Chilled Water Treatment, Algae-Cides #1, #2 & #3. "Virginia" products are available from leading wholesalers everywhere.

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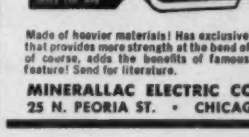
JIFFY CLIPS



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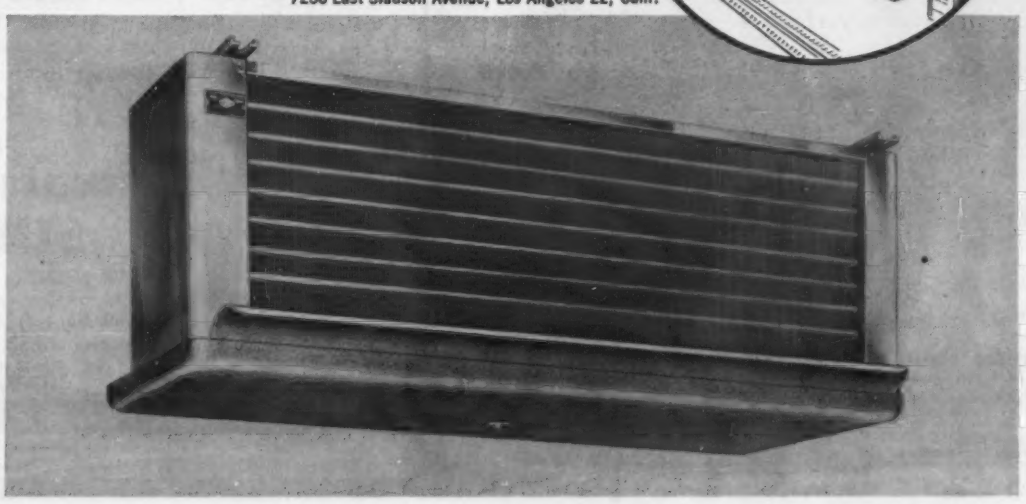


Metering Devices--

(Continued from preceding page)

and condenses in the head and the bulb cannot relay changes in temperature.

Thermostatic expansion valves are produced with liquid charged and gas charged power elements. (Gas charged elements have just enough liquid refrigerant to produce an equilibrium pressure under conditions of use.) Manufacturer literature explains in detail the specific applications and advantages of the two types.

Rated in tons, thermostatic expansion valves are usable over a range of conditions. Actually, each orifice can have more than one tonnage rating, depending on pressure drop between high and low sides of the system.

If the valve orifice is too large, the valve will hunt or surge; the coil will sweat or frost before the element can close the metering device.

If orifice is under size, coil will be starved regardless of the superheat setting.

If an oversize valve is in the system and correction is attempted by increasing the superheat, the coil will be starved much of the time.

This article is based in large part on information presented in TRANE AIR CONDITIONING MANUAL and in MODERN REFRIGERATION & AIR CONDITIONING — Althouse & Turnquist. Drawings by Detroit Controls. file guide—THERMOSTATIC EXPANSION VALVE metering device.

Revere Elects Eason

NEW YORK CITY—Election of John W. Eason, manager of the Baltimore Div. of Revere Copper & Brass, Inc., as a vice president of Revere, was announced by James M. Kennedy, chairman of the board. He will serve as executive head of the Baltimore Div.

Laborator Chart Aids Contractor In Estimating Labor Costs on Piping

HUNTINGTON, W. Va.—The Laborator is a chart designed and compiled for estimating labor for piping systems. It simplifies the method of determining the labor involved to install various types of piping systems where pipe and fittings are to be either welded, screwed, solderede, or caulked with lead, according to Charles M. Adams, P. O. Box 9101, Huntington 4, W. Va.

"Labor is one of the most controversial and important items in estimating, due to the variable working conditions that affect each job, phase of each job, and locality in which the work is to be performed," it was stated.

"For this reason the labor factors for each system are separated into five different labor bases (or labor units). Each labor base is given in man hours and fraction of man hours except for underground and aboveground soil and duriron piping which is given in lead joints per man day.

"One side of the Laborator establishes the man hours for copper tubing, screwed piping, screwed waste and vent piping, and underground and above ground soil and duriron piping. Pipe sizes are from ½ in. through 12 in. except copper tubing which is from ½ in. through 6 in. pipe size.

"These man hours include handling of pipe and fittings, measurements, cutting, threading, soldering, yarning, leading, and caulking.

"The other side of the Laborator establishes the labor man hours for welding carbon steel pipe and fittings from ½ in. through 12 in. pipe sizes. It denotes the man hours required for butt-welding of schedules 40 and 80 piping, nozzle welding for pipe with ⅜ in. and ½ in. wall thickness, slip-on welds for 150 lb. and 300 lb. flanges, and shows how labor for socket welding can be obtained.

"The indicated man hours include handling of pipe and fittings from the stockpile, layout, measurements, cutting, beveling, tacking, chipping, and welding complete, but does not include placing of pipe in hangers or ground.

"As wages vary in different localities, it is therefore necessary for the estimator to multiply the number of labor man hours by the local average hourly wage rate to obtain the actual labor cost.

"The Laborator was compiled and designed after a number of years of actual installations, supervision, and estimating experience in various localities." Price—$7.50.

Mears Names Root Chief Engineer

PORTLAND, Ore. — W. K. Roots has been appointed chief engineer of Mears Electric Controls, Inc., and Mears Electric Circuit Breakers, Inc. here, according to J. S. Mears, president.

Roots will be in charge of all new product development in the field of thermostats, air circuit breakers, load regulators, and controls, and will head up the new product development group in the new Mears office and factory at Beaverton, a suburb of Portland.

Watsco Purchases Ultra-Modern Bldg.

HIALEAH, Fla. — Watsco, Inc., distributor of air conditioning and refrigeration components, announced that it has purchased 6,000 sq. ft. of additional space and that the one-story ultra-modern air conditioned building will be used for both increased research and production facilities for current and new products.

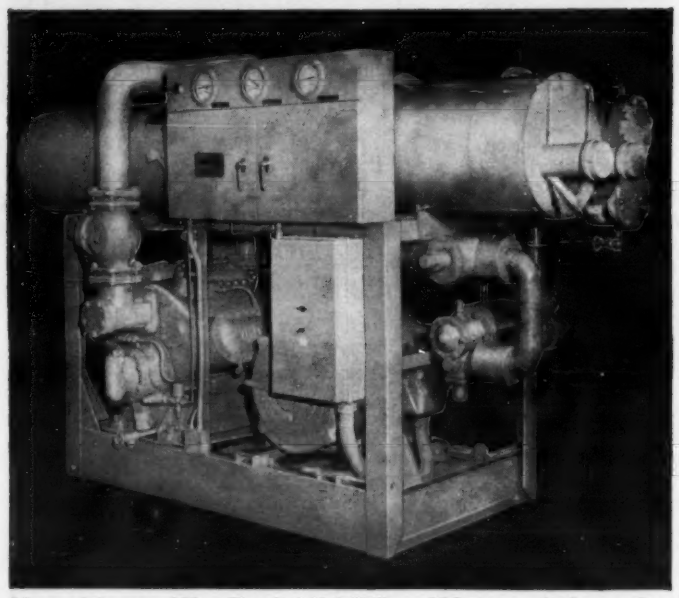
A section of this building will also be devoted to the advertising and sales promotion department, according to the announcement.

Gilmore Service Opens In Nashville, Tenn.

NASHVILLE, Tenn. — Gilmore Air Conditioning & Heating Service, headed by John E. Gilmore, has opened at 808 Eighteenth Ave., S.

Gilmore, who will feature 24-hour-a-day service, has been in the service department of Central Air Conditioning & Heating, since 1953. Earlier he was with Modern Service Stores, and also was in business for himself.

Air conditioning made easy with new space-saving fully flooded Vilter Chiller



View of the new Vilter Flooded Uni-Chiller—100-ton nominal capacity.

Compact, space-saving design, low cost and a flooded water chiller are some of the important advantages of the new Vilter flooded type Uni-Chiller.

While especially suited for air conditioning applications, Uni-Chillers fit readily into almost any liquid chilling system.

Four standard sizes are offered—25, 50, 75 and 100-ton nominal capacities.

All components are sized to operate efficiently as a system. The flooded-type shell and tube cooler and the condenser are mounted above a rugged Vilter VMC compressor. Shipped assembled, the Uni-Chiller arrives with all interconnecting piping completed, controls factory wired, cooler and low-temperature piping insulated and a holding charge of refrigerant.

Motor and starter can also be supplied by Vilter and if desired, the compressor and motor can be run-in and all controls and gauges properly adjusted and set. By specifying a completely assembled unit, installation costs and start-up time are reduced . . . real savings to you.

Why not contact your nearest Vilter representative or write directly to Vilter for full details and application recommendations.

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Air Units • Ammonia and Freon Compressors • Booster Compressors Baudelot Coolers • Water and Brine Coolers • Blast Freezers Evaporative and Shell and Tube Condensers • Pipe Coils Valves and Fittings • Pakice and Polarflake Ice machines.

We will be pleased to send you complete details on the above equipment.

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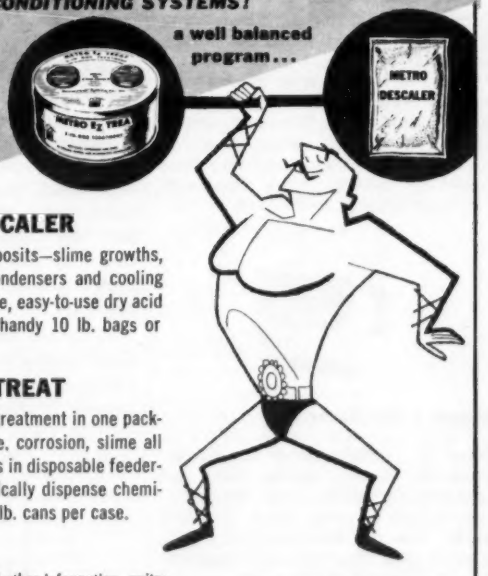
INCREASES THE EFFICIENCY...LENGTHENS THE LIFE... OF AIR CONDITIONING SYSTEMS!



METRO DESCALER
Removes scale deposits—slime growths, too—from evap condensers and cooling tower systems. Safe, easy-to-use dry acid powder packed in handy 10 lb. bags or in bulk.

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Gibson Refrigerator Sales Up In April

GREENVILLE, Mich.—April sales of Gibson refrigerators increased 43.9% over April of 1959 to lead all other products in scoring Gibson's 22nd consecutive month of sales increases over the corresponding month of the previous year, according to C. J. Gibson, Jr., president, Gibson Refrigerator Div., Hupp Corp.

W. C. Conley, vice president-Gibson sales, reported that total product sales for the first four months are 39.7% ahead of the first four months of last year.

Increases by product were: refrigerators, 75.2%; freezers, 22.2%; ranges, 79.3%; and dehumidifiers gained 119.6%. Room air conditioner shipments were off 4.7%, according to the report.

Plant Vacation Schedule

Shutdowns Starting July 2 or Later

This is the third in a series of handy guides to summer vacation or inventory shutdown schedules announced by manufacturers. It is published to help salesmen avoid useless calls and to assure purchasing departments of adequate stock on hand. CLIP and SAVE for future reference.

Company	Shutdown Period Plant	Office	Shipments From Plant
Air Controls, Inc., Cleveland.....	7/2 -7/10		None
Cleveland Heater Co., Cleveland..	7/2 -7/10		None
Amana Refrigeration, Inc., Amana, Iowa	7/4 -7/17	7/4 -7/17	Regular
American Air Filter Co., Inc., Fameo Div., Louisville	7/4 -7/15		Emergency
Illinois Engineering Div., Moline	7/4 -7/15		Emergency
Herman Nelson Div., Moline, Morrison	7/4 -7/15		Emergency
Bard Mfg. Co., Bryan, Ohio.....	7/4 -7/17	7/4 -7/17	Emergency, Stock Only
Chase Brass & Copper Co., Inc., Waterbury, Conn.	7/4 -7/17		Regular
Johnson Furnace Co., Cleveland..	7/4 -7/10	Open	Regular
Roberts-Gordon Appliance Corp., Buffalo	7/4 -7/17	7/4 -7/17	Emergency
Rubatex Div., Great American Industries, Bedford, Va.	7/4 -7/17	7/4 -7/17	Stock Only
Hart & Cooley Mfg. Co., Holland, Mich.	7/9 -7/17	7/9 -7/17	Emergency
Tuttle & Bailey, New Britain, Conn.	7/9 -7/17	Open	None
Dean Products, Inc., Brooklyn....	7/11-7/24	7/11-7/24	None
Geauga Industries Co., Middlefield, Ohio	7/11-7/24	Open	Emergency
Janitrol Heating & Air Conditioning, Columbus Ohio...	7/11-7/24		Emergency

S. J. Nelson

R. S. Fries

R. L. Allen

J. E. Remington

Minneapolis-Honeywell Names 4 To Factory, Branch Managing Posts

MINNEAPOLIS—Three administrative officials at Minneapolis-Honeywell Regulator Co. have been appointed to new positions involving management of the firm's factories in Minneapolis, Los Angeles, Chicago, and Wabash, Ind.

Stanley J. Nelson, for the past two years manager of operations for the company's Minneapolis Div., has been named manager of residential operations—a new post.

R. S. Fries, who has been manager of Honeywell's Appliance Controls Div. in Los Angeles, is moving to Minneapolis to become manager of commercial operations — also a new post.

Ralph L. Allen, who has been manager of Honeywell's branch sales office operations, has been appointed to succeed Fries at the Los Angeles plant. J. E. Remington, formerly corporate credit manager, succeeds Allen, and will continue to headquarter in Minneapolis.

The firm said appointment of Nelson and Fries to their new positions makes it possible to provide specialized production and engineering support for its residential and commercial sales divisions.

Nelson will be in charge of Honeywell facilities involved in the design and manufacture of automatic controls for the residential heating and air conditioning market. These include Minneapolis temperature control plants (with the exception of the firm's Panel Div. factory at 700 N.E. Ramsey) and the Los Angeles facility.

Fries is assuming over-all responsibility for the Minneapolis Panel Div. and factories in Chicago and Wabash. Facilities under his direction produce a variety of products, including automatic control devices and systems for use in controlling heating, ventilating, and air conditioning equipment in commercial buildings; electronic plant security systems; electronic air cleaners, etc.

Dearborn Chemical To Sell Nationally

CHICAGO — Glen R. Pierce has been named manager of the newly-created Distributor Sales Div. of Dearborn Chemical Co., the firm announced recently.

A national distributor system will be set up under Pierce's direction for the sale of the company's maintenance protective finishes, air conditioning supplies, and electrical tapes.

Bakken Heads Copper, Brass Research Assn.

HOT SPRINGS, Va. — G. P. Bakken was elected president of the Copper & Brass Research Association here when this association of the nation's leading brass mills held its 38th annual meeting at The Homestead.

Bakken, who is president of Chase Brass & Copper Co., succeeds James M. Kennedy, chairman of the board of Revere Copper & Brass, Inc.

Succeeding Bakken as senior vice president of CABRA is E. P. Dunlaevy. Dunlaevy is executive vice president of Phelps Dodge Copper Products Corp.

Newly named vice presidents were: Richard M. Stewart, The American Brass Co.; Lee Smith, The National Copper & Smelting Co.; Joseph F. Murray, Reading Tube Corp.; S. T. Williams, Scovill Mfg. Co.; Richard H. Lewin, Cerro de Pasco Corp.

Re-elected as vice presidents were Austin R. Zender, Bridgeport Brass Co., and D. T. Marvel, Olin Mathieson Chemical Corp., Western Brass Mills Div. F. L. Riggin, Sr., Mueller Brass Co., was re-elected treasurer.

Also renamed as CABRA officers were T. E. Veltfort, managing director, and Carl H. Pihl, secretary. These 12 officers, along with Kennedy as past president, make up CABRA's board of directors.

REPRINTS SELLING FOR PROFIT.

By Frank Klein—Only $1.00 ea. Clip this ad and mail with your name and address to: Air Conditioning, Heating & Refrigeration News, 450 W. Fort St., Detroit 26, Mich.

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This one handy, compact outfit is all you need to find and fix refrigerant gas leaks. Sensitive leak detector "sniffs" as little as 100 parts of halide refrigerant* in a million parts of air . . . *in seconds*, pinpoints leaks too small to show up in soapy water. Also included in the outfit are 3 sizes of torch stems for open-flame soldering, heating, and brazing; an adjustable gas pressure regulator; interchangeable torch handle; hose; enameled steel carrying case. Models for use with B or MC PREST-O-LITE acetylene tank.

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- Sealing breaker strips and joints in air ducts
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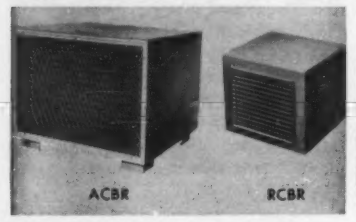
PRODUCT NEWS

Here are several new developments in the field of scientific heating and air conditioning, including a new heat pump unit that has just completed extensive field testing and development work.



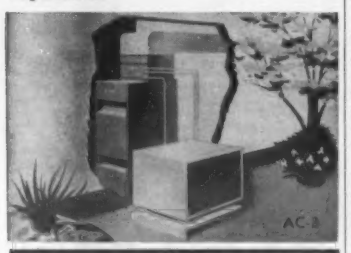
American-Standard Split-System Heat Pump

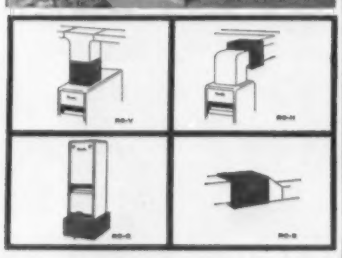
This Split-System Heat Pump, available in 3 and 5 H.P. models, consists of the AC-BR Outdoor Unit and the RC-BR Inside Unit, with its self-contained, high-capacity blower (mounted in the duct system). A single automatic thermostat provides the desired temperature in both summer and winter by means of an automatic gas reversing valve. The unit also has a de-icing system, which prevents ice build-up.

American-Standard Package Heat Pump

The ACPR Package Heat Pump is factory assembled and pre-wired, ready to install. It goes in an attic, crawl space, transom, or central hallway, to provide both heat *and* cool year-round. The ACPR comes in 2, 3 and 4 H.P. sizes. A single automatic thermostat provides the desired temperature in both summer and winter. Ice build-up is prevented by a special de-icing system, and a double drain pan saves work and money on installation, and meets FHA requirements.

For cooler areas, a supplementary electric heater is available in four capacities.



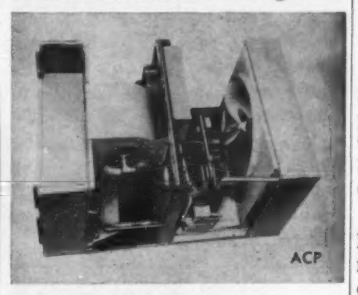


American-Standard Split-System Air Conditioner

This compact air conditioner consists of the AC-B outdoor condensing unit and one of 4 different evaporator models.

The AC-B condensing unit comes in 2, 3, 4 and 5 H.P. sizes. It is simple to connect the AC-B to a new or existing warm-air system. Controls are located where they are easy to get at; suction and liquid line valves are in front for quick service; the 4 and 5 H.P. units have *two* condenser fans for maximum cooling efficiency.

The four evaporator models cover a range of types and sizes for every kind of home and every furnace and ductwork design.



American-Standard Self-Contained Air Conditioner

This unit, the ACP, installs anywhere—through a basement wall, up in an attic, even outdoors on a roof. It features a powerful pull-through type condenser fan of high efficiency; a built-in double drain pan which eliminates the expense of fabricating a secondary pan to meet FHA requirements; a durable baked-enamel weather-resistant finish. The ACP comes in 2, 3 and 4 H.P. models. The 4 H.P. Unit has *twin* compressors.

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AIR CONDITIONING DIVISION
ELYRIA, OHIO

Simon Oil Sponsors Niagara Falls Golf Tournament

NIAGARA FALLS, N. Y.—A challenging event has been added to the Western New York golfing calendar this year by the Simon Oil Co. here.

On Sunday, June 26, at the Hyde Park Golf Course in Niagara Falls, 24 of western New York's and Canada's top pros and amateurs will tee off in the first annual Simon Oil Invitation Golf Tournament. The par busters will be shooting for more than $700 in prize money and merchandise gifts.

Simon Oil, a distributor of Gulf products and Janitrol and Columbia heating equipment, has recently embarked on an advertising and merchandising program aligned with sports.

The company sponsors the leading Municipal League baseball team, which again this year, will play host to Satchel Paige's All-Stars. Simon also sponsors teams in the Babe Ruth League and the Summer Basketball League, and recently joined in the newest fad by forming the Simon Oil Racing Team in the Niagara Falls Go-Kart Racing League.

Carlin Book Covers Oil Burners, Water Heaters

WETHERSFIELD, Conn.—A 100-page, pocket-size "Handbook of Oil Burners and Water Heaters" is offered by The Carlin Co. here.

Designed particularly as an aid to installers and service personnel, the book contains engineering and operating data covering all phases of U. S.-Carlin equipment.

1,159,000 Residences Added In 1959

Home Heating Customers Up 6% over 1958; Total Reaches 20.2 Million—AGA Reports

NEW YORK CITY — The American Gas Association reported that home-heating customers advanced to an all-time high of 20.2 million in 1959, up 6% from the previous year.

Summarizing its annual househeating survey, AGA noted that 1,159,000 heating customers were added by U. S. gas utility companies last year. The association estimates nearly 4 million more customers will be heating with gas by the end of 1962.

Two-thirds of the estimated 3.9 million new gas heating installations forecast during the next three years will be made in newly-built homes, while conversions from other fuels are expected to total about 1.3 million, AGA said.

The gas trade association's survey shows 66.7% of the industry's residential customers heat with gas, up from 64.9% a year earlier. The new figure represents 81.2% of the potential attainable saturation of househeating among existing gas customers, it was stated.

The summary stressed that the statistics cited represent dwelling units rather than units of heating equipment. Many homes utilizing wall furnaces, space heaters, or floor furnaces employ more than one heating unit. The report also excludes dwelling units in apartment houses or other multiple-family structures served by central heating systems, as well as homes heated by LP "bottled" gas.

"More than one-quarter of the heating customers the industry expects to add by 1963 will be located in the east north central states, where nearly 1.1 million installations are anticipated," AGA said. "This area includes Illinois, Indiana, Michigan, Ohio, and Wisconsin.

"The recent or impending relaxation or removal of restrictions affecting use of gas for househeating are expected to strengthen the trend toward gas in the east north central states.

"The Pacific region, covering California, Oregon, and Washington, will rank second, with an estimated 641,000 additions."

AGA estimates 90% of these added installations will be in new homes and notes that the recent arrival of natural gas in the Pacific Northwest "also is stimulating conversions from other heating fuels."

Ranking third is the middle Atlantic area—New York, New Jersey, and Pennsylvania — where 521,000 new heating customers are expected.

AGA also stated that at the end of November, 1959, complete or partial restrictions on the installation of new gas heating equipment were in effect for utilities serving 4.4 million households.

The AGA survey was based on information submitted by 356 companies serving 28.3 million residential gas customers throughout the nation, as of Nov. 30, 1959. These companies represented 94% of the industry's total customers.

Data submitted by individual companies indicated number of residential users and heating customers, anticipated new installations, and the existence or absence of heating restrictions. Industry totals were developed from these reports and from estimates for non-responding companies, and thus represent the entire gas utility industry, it was pointed out.

AGA's annual survey is used by gas heating equipment manufacturers in determining the magnitude and location of markets for their products. Manufacturers or utilities requiring additional data may direct inquiries to the Bureau of Statistics, American Gas Association, 420 Lexington Ave., New York 17, N. Y.

Gas Heating Data by States

	ESTIMATED U.S. GAS HOUSEHEATING CUSTOMERS END OF 1959		ANTICIPATED ADDITIONAL GAS HOUSEHEATING CUSTOMERS,‡ 1960-1961		
	Estimated Gas Househeating Customers Dec. 31, 1959	Potential Residential Househeating Customers†	1960-1961 Heating Season Total	New Dwelling Units	Existing Dwelling Units
United States	20,162	24,836	1,327	827	500
New England	368	804	47	14	33
Connecticut	73	269	12	4	8
Maine	6	9	*	*	*
Massachusetts	235	420	28	8	20
New Hampshire	7	18	2	1	1
Rhode Island	47	88	5	1	4
Vermont	*	*	*	0	*
Middle Atlantic	2,320	4,510	173	88	85
New Jersey	339	1,157	39	25	14
New York	882	1,717	81	33	48
Pennsylvania	1,099	1,636	53	30	23
East North Central	4,230	5,388	412	171	241
Illinois	1,003	1,533	134	45	89
Indiana	306	457	49	20	29
Michigan	922	1,170	101	36	65
Ohio	1,774	1,857	77	55	22
Wisconsin	225	371	51	15	36
West North Central	1,900	2,165	104	60	44
Iowa	305	361	20	9	11
Kansas	452	449	9	8	1
Minnesota	328	387	27	14	13
Missouri	530	657	34	19	15
Nebraska	219	229	10	7	3
North Dakota	19	33	2	2	0
South Dakota	47	49	2	1	1
South Atlantic	1,506	1,983	109	79	30
Delaware	18	32	2	1	1
District of Columbia	73	110	3	1	2
Florida	122	195	15	11	4
Georgia	440	493	24	20	4
Maryland	257	416	23	19	4
North Carolina	74	97	13	9	4
South Carolina	35	54	9	3	6
Virginia	185	274	15	12	3
West Virginia	302	312	5	3	2
East South Central	1,164	1,234	55	44	11
Alabama	338	361	15	14	1
Kentucky	320	354	16	12	4
Mississippi	244	245	10	9	1
Tennessee	262	274	14	9	5
West South Central	3,444	3,431	129	122	7
Arkansas	256	256	11	10	1
Louisiana	634	632	25	22	3
Oklahoma	530	527	15	15	0
Texas	2,024	2,016	78	75	3
Mountain	1,057	1,086	90	60	30
Arizona	243	257	20	18	2
Colorado	327	333	17	15	2
Idaho	18	18	25	3	22
Montana	102	103	3	2	1
Nevada	10	12	1	1	*
New Mexico	156	155	12	12	*
Utah	147	152	9	7	2
Wyoming	54	56	3	2	1
Pacific	4,173	4,235	208	189	19
California	4,062	4,077	181	178	3
Oregon	52	76	9	3	6
Washington	59	82	18	8	10

*Less than 500 customers.

†Including customers already using gas for househeating.

‡Reflects expectations of entire gas industry.

OFFICERS of the newly-organized Stiles-Radel Co., distributor of Hussmann food store equipment in greater Chicago, are congratulated by Hussmann Vice President Arthur B. Biddle, left. They are (l. to r.): James F. Stiles, III, president; Gilbert W. Stiles, secretary-treasurer; and James F. Radel, former manager of the Hussmann Chicago factory branch, vice president in charge of sales.

New Stiles-Radel Co. Takes Over Hussmann Chicago Factory Branch

ST. LOUIS — An expanded and strengthened organization for the distribution, installation, and servicing of Hussmann food store equipment in the Greater Chicago area was announced here by W. B. McMillan, chairman of Hussmann Refrigerator Co.

The assets and organization of Hussmann's Chicago factory branch have been acquired by a new corporation, the Stiles-Radel Co., which will operate jointly the facilities of the former branch and those of Stiles Bros., Co., Inc., Waukegan, long a major distributor of food store equipment.

Officers of the new company are James F. Stiles, III, president; James F. Radel, former manager of the Hussmann Chicago branch, who will be vice president in charge of sales; and Gilbert W. Stiles, secretary-treasurer.

The new company will distribute the entire line of Hussmann refrigerated cases, shelving, checkouts, and other food store equipment as well as related products required for complete supermarket installations, the announcement said. It will also provide services of installation, maintenance, and financing.

Headqarters of Stiles-Radel will be at 1550 Grand Ave., Waukegan, Ill., formerly the general office of Stiles Bros. The company will continue fully to operate the former Hussmann branch facilities at 1215 S. Harlem St., Forest Park, Ill.

McKeough Represents Bohn In New England

DANVILLE, Ill.—William J. McKeough of Hartford, Conn. has been appointed a sales representative for Bohn commercial refrigeration and air conditioning products by the Danville Div. of Bohn Aluminum & Brass Corp.

The appointment was announced by D. J. Jessup, sales manager of the Danville Div. Commercial Dept. McKeough will sell Bohn commercial refrigeration products in Connecticut, Rhode Island, Massachusetts, New Hampshire, Vermont, Maine, and upper New York State.

McKeough has been in the commercial refrigeration, air conditioning, and heating field for 13 years, specializing in low temperature units. For the past eight years, he has been a manufacturers' representative.

Christiansen Gets New Schaefer Post

MINNEAPOLIS — Robert P. Christiansen, who has been district factory representative for Schaefer, Inc., in charge of the Louisville territory, has been appointed eastern sales manager for the company.

Eventually, he will headquarter in the Philadelphia area. The company manufactures ice cream cabinets and dairy cases.

NCRSA Survey Finds Ways To Cut Costs

PHILADELPHIA — A survey report on effecting economies in operations has recently been published by the National Commercial Refrigerator Sales Association.

The report gives details of new machinery which has cut costs as well as ideas to more efficient use of employes' time, according to Marie Lawton, executive secretary.

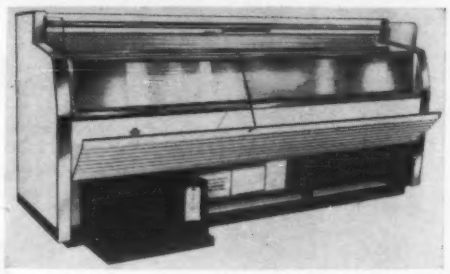
It represents a survey of distributor members to determine by what means economies in operations have been made in their businesses. This report summarizes the information thus developed.

It covers improved methods or new equipment in office, warehouse, delivery and installation, and sales department.

Purpose of the report, according to Miss Lawton, is to bring to the attention of members the value of periodically studying operations in all departments of their business.

Truck-Trailer Mfrs. To Discuss Reefers

HOT SPRINGS, Va.—Air distribution in reefers will be one of the topics discussed during the 12th annual summer meeting of the Truck-Trailer Manufacturers Association to be held at The Homestead here July 10-13.



BALLY LOW TEMP self-service case with hinged front panel in servicing position.

Hinged Front, Slide Out Tracks Ease Service on Bally Cases

BALLY, Pa.—As part of a series of design advancements aimed toward simplifying the job of the refrigeration serviceman, Bally Case & Cooler, Inc. announced that a new type of construction on case fronts has been completed.

It will make servicing of compressors easier, according to George Melcher, chief design engineer.

Melcher said the change affects the two most popular cases in the Bally line. One is the "Angle Freezer," which is a sliding door counter-type case used as a check-out counter, and the other model is the "Low Temp," an open type glass-front self-service case.

"Both these models have compressors located in the non-refrigerated lower section," it was pointed out. "The compressor is mounted on tracks that permit fast pull-out for service.

"With the new design the porcelain front panel is now held in place with a continuous type hinge and swings up and out of the way to facilitate withdrawing the compressor. This panel is equipped with a simple hooking device which will keep it locked in the out-of-the way position during the period of servicing."

Custommade Plant Starts Production

CONWAY, Ark. — According to J. P. Stoltz, executive vice president, the first refrigerated cabinet to be made at the new Custommade Products Corp. plant here came off the assembly line recently.

Custommade is a subsidiary of Universal Match Corp.

Stoltz said the plant is now employing some 100 persons and expects to expand its operations to employ 200 to 300 workers in a year.

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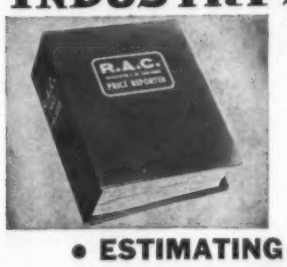

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LA CROSSE BOTTLE COOLER

Get up to 45% greater capacity . . . with La Crosse's "year's ahead" engineering and trim, modern design in top quality Bottle Coolers. The 6' 6" model, with coil only, holds 40 cases . . . other models from 4' 6" to 10' 6" hold from 26 to 66 cases. Get more capacity for the money . . . get La Crosse!

KUBE-KING

The low cost answer to top customer service . . . The La Crosse Kube-King produces a constant supply of crystal clean Kubes (approx. 3200 per 24 hours) . . . has 110 lb. storage capacity . . . convenient reach-in height . . . only 6 qts. of water per freezing cycle. Go with the leader . . . go La Crosse!

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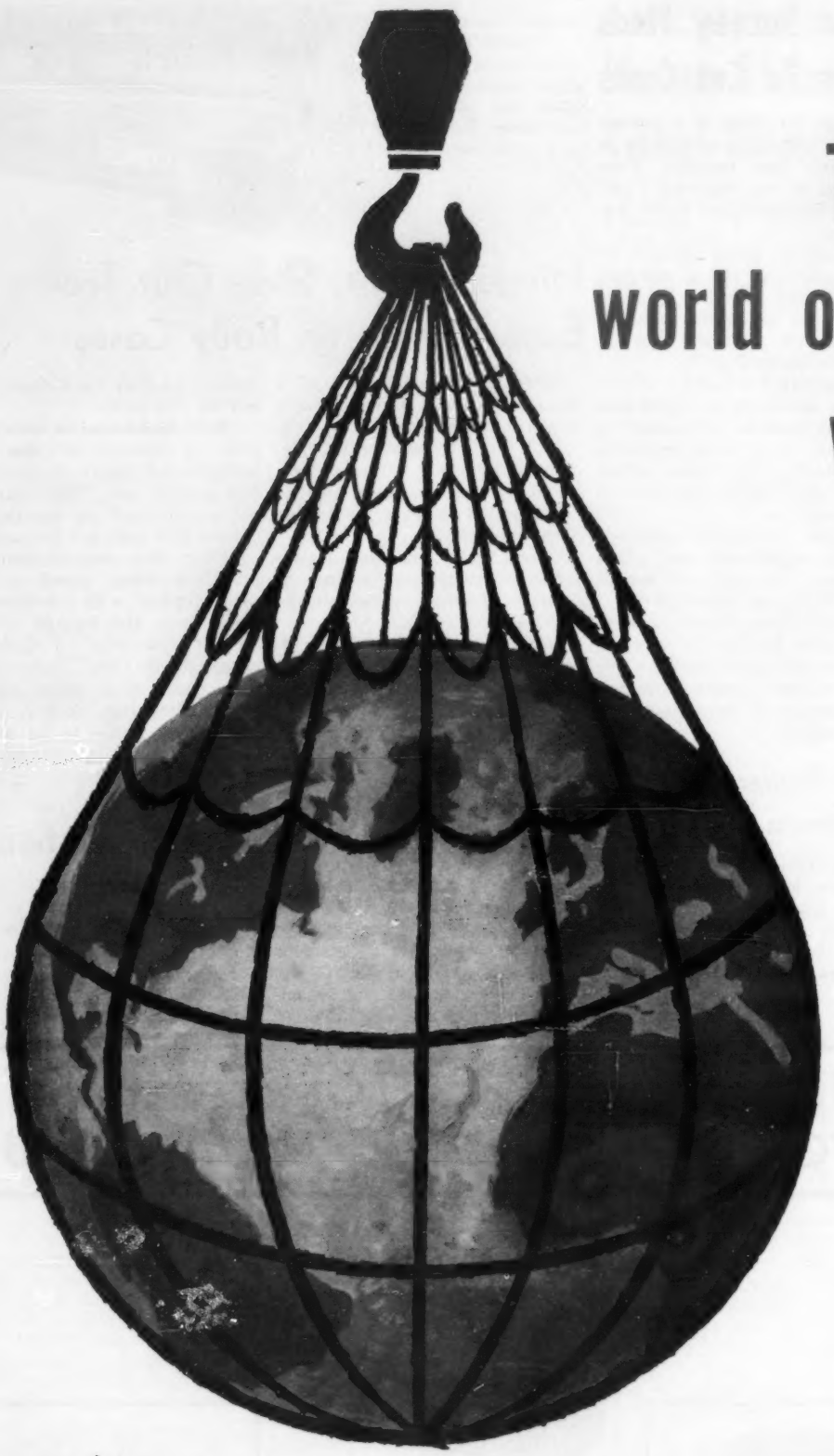

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Ten years from today the free world's production of goods and services will have doubled.

Ten years from today the free world will have a population of 2,000,000,000.

Ten years from today U. S. exports will be up $8,000,000,000.

Ten years from today foreign sales of U. S. subsidiaries will have doubled to more than $60,000,000,000.

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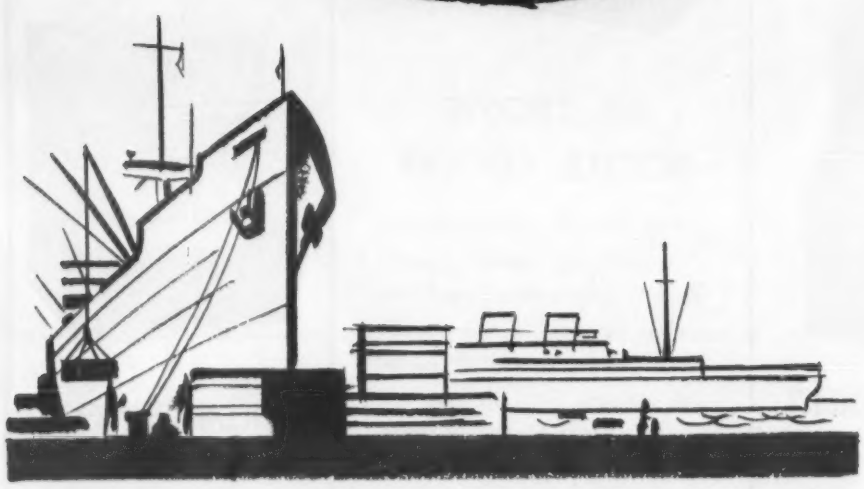
By advertising in the World Trade issue of AIR CONDITIONING, HEATING & REFRIGERATION NEWS August 1, you can sell subscribers in 51 nations on your products and your services. Or you can attract new suppliers and distributors to sell your products. The free world is one market . . . let your company grow with it.



NEW YORK, 521 Fifth Ave., MUrray Hill 2-1928-9, Robert M. Price
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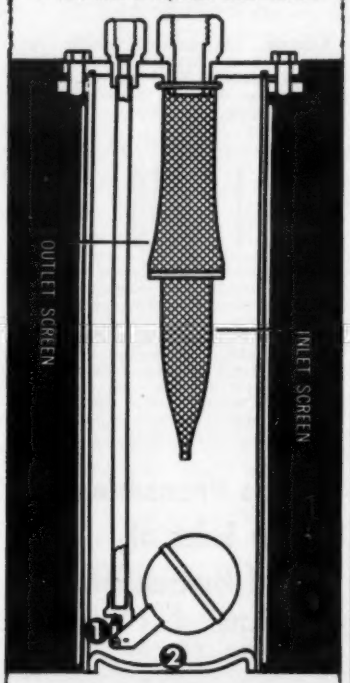

1 OIL RETURN VALVE: Located ABOVE the sludge reservoir.

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NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Hottest Weather Yet Due In Several Areas Week of June 20

NEW YORK CITY—Some of the hottest temperatures so far this season are going to affect several areas of the nation during the week of June 20.

That's the forecast made by the Irving P. Krick Associates, weather analysts, in the NBC Monitor radio broadcasts aired over the week-end under sponsorship of Fedders Corp.

Weather maps compiled from solutions by electronic computers indicate that this is just a sample of what is to be expected for a good share of the summer months. The long-range forecast calls for a hot summer, listeners were advised.

Torrid temperatures are expected in the far west, with the interior valleys of California registering temperatures of 95° F. or better through a good portion of the week. The hottest temperatures in the nation are seen occurring in the desert southwest.

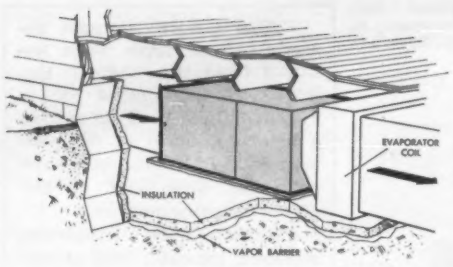
The southern and central plains will find temperatures climbing early in the week, and by Tuesday, the first day of summer, hot, sticky conditions will have pushed northward from Texas into Kansas and Missouri, it was predicted.

The northern plains will be less hot even though skies are sunny. Warmer temperatures are expected late in the week in the northern plains and upper Great Lakes region. During the middle part of the week, high temperatures will be common through the lower Great Lakes and the Ohio Valley, according to the forecast.

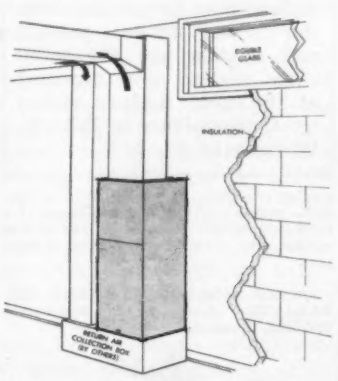
High humidities are expected to add to the discomfort of high temperatures through the Gulf coastal region during the week. Rising temperatures will be quite noticeable along the Atlantic Seaboard with 90° readings widespread up into the mid-Atlantic states, it was predicted. The same surge of Gulf air will sweep into Pennsylvania, New York state, and northward through the New England area.

Markel Names Warner

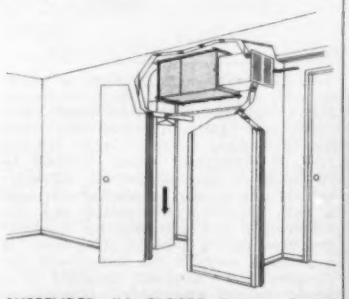
BUFFALO — Appointment of Frederick E. Warner as assistant sales manager in charge of built-in products was announced by Richard C. Piper, Jr., vice president in charge of sales for Markel Electric Products, Inc. here.



IN CRAWL SPACE—Lennox forced air electric furnace installed horizontally. Can be installed for right or left air flow. Cooling coil has been added.



IN BASEMENT—Lennox forced air electric furnace in up-flo position. It is connected to supply and return duct system. Cooling coil can be added easily.



SUSPENDED IN CLOSET—Lennox forced air electric furnace in horizontal position. Note large central return grille. Discharge trunk leads to perimeter ducts under floor.

NEW LENNOX compact furnace for central forced warm air applications.

Lennox--

(Continued from Page 1, Col. 3)

insulated for electric heating."

Benefits of this unit, said Lennox, include air circulation to prevent air stratification and staleness; it provides air filtering; fresh air can be introduced into the system; humidity can be controlled; air purifiers can be added. In common with standard Lennox practice, the blower is resiliently mounted and has ample capacity for additive cooling, it was stated.

This unit, the "ES" series, can be installed as a horizontal unit, an up-flow unit, or a down-flow unit.

Lennox said the unit "features 'step' starting and shutdown (with 230 volts there is 5.71 kw. on each of the two steps). This reduces power 'sag' and 'surge.' The unit is UL listed and is completely assembled and pre-wired.

"Units now being produced are single phase. Following are the heating outputs with varying voltages: 208 V.-31,800 B.t.u.h.; 220 V.-35,700 B.t.u.h.; 230 V.-39,000 B.t.u.h.; 240 V.-42,500 B.t.u.h.

Timid Approach To Electric Heat--

(Continued from Page 1, Col. 5)

or 6 to 7% of the expected 60 million residential electric customers.

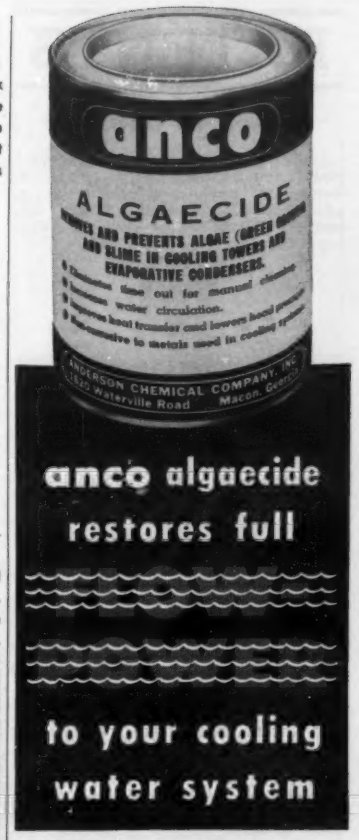
Ayers said the current American trend is to purchase in terms of "packages" and he urged the industry to include some form of electric heating as part of a "package" home. The home buyer, he said, likes to buy complete; under a home mortgage he can, and will, buy more. It was difficult to foresee, he said, how the manufacturer can bring together the heating and air conditioning contractor, the electrician, the supplier of insulation, and the appliance distributor, but this would seem to be how it would have to be done.

NEMA Reports

Household Refrigerator Sales Hit 1,201,200 For First 4 Months

NEW YORK CITY—Total industry sales of electric household refrigerators in April declined to 294,000 from 301,000 a year ago but sales in the first four months of 1960 rose to 1,201,200 from 1,197,100 in the like period of 1959, according to a report by the National Electrical Manufacturers Association.

NEMA also reported that April sales of farm and home freezers dropped to 105,800 from 112,900 a year earlier. For the January-April period, freezer sales totaled 368,600 compared with 403,700 in the corresponding period of 1959, it was indicated.



anco algaecide restores full to your cooling water system

Algae, fungi, and other slimes in towers and condensers create an additional handicap for your cooling system, choking off efficient passage of water through strainers, lines and tubes, cutting heat transfer, raising head pressure, and increasing corrosion. Your equipment works twice as hard to do an ineffective job.

ANCO Algaecide removes and prevents further growth of these organisms, restoring your cooling water system to efficient, economical operation. It is non-corrosive to metals and serves as a preservative to wood structures.

ANCO Algaecide is packaged in briquette form and will rid equipment of fouling organisms quickly without delay for manual cleaning. Continued use will assure permanent protection, giving your cooling water system full, efficient flow power at all times.

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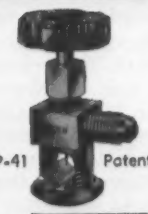
MADDEN *Preferred by* SERVICEMEN EVERYWHERE

MADDEN
Tube Piercing Valves

1 Valve for 4 Tube Sizes—3/16", 1/4", 5/16", and 3/8".



HP-41 Patented

HP-41A Patented

New Tamper-proof style has Allen wrench head.

CHARGING AND TESTING UNIT IN METAL BOX includes gauges, manifold bar, hand wheels, hanging hook, hose holder, and one set of Madden color coded charging lines.

Write for New Refrigeration and Air Conditioning Catalog No. R460.

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A 10½x14x½" Costs 50¢
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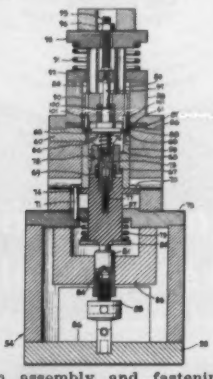
PATENTS

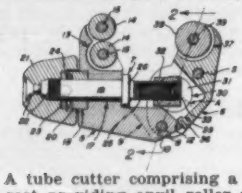
Week of Jan. 19

2,921,366. ASSEMBLY FIXTURE FOR THERMOSTATIC VALVES. Robert T. Larsson, Mount Prospect, and Nello L. Benedetti, Chicago, Ill., assignors to The Dole Valve Co., Chicago, Ill.



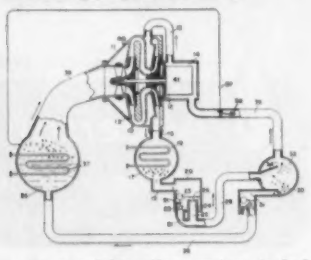
In an assembly and fastening fixture for thermostatic valves and the like, a base having a table at the top thereof having a central recess therein and an open portion leading therefrom through said table, a central ram guided in said open portion for movement toward and from said table, means biasing said ram in retracted relation with respect to said table, other means moving said ram toward said table, spaced locating pins in said recessed portion extending upwardly thereinto for locating the bridge and guide of a thermal sensitive element. . . .

2,921,388. HAND CARRIED AND OPERATED TUBE CUTTER. John H. Stanley, Euclid, Ohio, assignor to Parker-Hannifin Corp., Cleveland, Ohio.



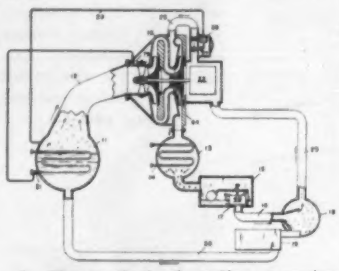
1. A tube cutter comprising a body, tube seat providing anvil roller means supported on said body, a cutter carrier arm swingably mounted on the body and having a cutter wheel thereon in position for being engaged with and disengaged from a tube seated on said roller means as the arm is swung in one direction or the other with relation to said body. . . .

2,921,445. CENTRIFUGAL REFRIGERATION MACHINES. Carlyle M. Ashley, Fayetteville, and Adolph Zulinke, Syracuse, N. Y., assignors to Carrier Corp., Syracuse, N. Y.



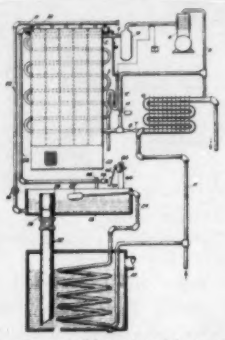
8. In a refrigeration system including a motor driven compressor, a condenser, an economizer, and an evaporator connected to form a closed circuit for the flow of refrigerant, the method of cooling the motor which consists in the steps of withdrawing gaseous refrigerant from the evaporator and forwarding it to the condenser at a higher pressure. . . .

2,921,446. REFRIGERATION MACHINE. Adolph Zulinke, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



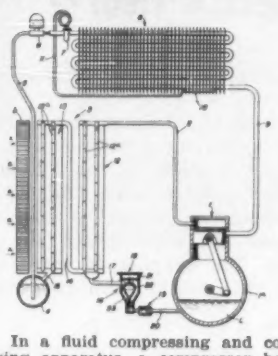
5. The method of cooling a motor driving a compressor in a refrigeration system including a condenser, and economizer and an evaporator connected to form a closed circuit for the flow of refrigerant which consists in the steps of passing gaseous refrigerant formed in the economizer through a path including the motor and the compressor and automatically controlling flow of the gaseous refrigerant at a location between the motor and the compressor to maintain pressure of a predetermined magnitude in the economizer. . . .

2,921,447. ICE MAKING APPARATUS. Maynard G. Gottschalk, Syracuse, N. Y., assignor to Carrier Corp., Syracuse, N. Y.



1. An ice making machine comprising a refrigerated ice forming member; a sump containing a supply of water; an overflow trough adjacent one end of said member; means, including a motor driven pump, for continuously circulating water through a cycle including the sump and a surface of the ice forming member whereby a portion of the water is formed into ice as it moves over the refrigerated surface and a portion returns to the sump. . . .

2,921,448. LUBRICANT SEPARATOR FOR FLUID COMPRESSING AND CONDENSING APPARATUS. Thomas W. Carraway, Dallas, Tex.



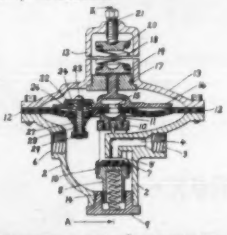
1. In a fluid compressing and condensing apparatus, a compressor having means for containing lubricant for the compressor; a condenser structure having an inlet and outlet and comprising a heat exchanger providing a closed path along which fluid compressed by said compressor may flow and presenting a surface contactable by a single flowing stream of fluid

Editor's Note: Patents described here have been selected from the "Official Gazette" of the United States Patent Office. They offer only a brief summary of each invention. In some instances only the first part of the digest is presented.

Printed copies of patents, reissued patents, and patent designs may be secured from the Patent Office; patents and reissues are 25¢ each, while designs are furnished at 10¢ each. Address orders to: Commissioner of Patents, Washington 25, D. C.

cooling medium; lubricant return conduit means providing communication between said lubricant containing means and said heat exchanger fluid path. . . .

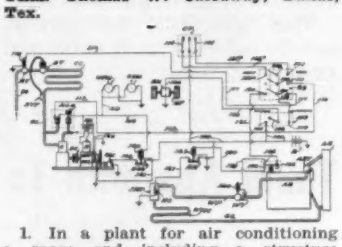
2,921,597. VACUUM CONTROL APPARATUS. Keith Parr, Melbourne, Victoria, Australia.



1. Vacuum control apparatus of the class described comprising a valve casing, a pressure inlet passageway in the casing, a flow control valve adapted to control the inlet passageway for the purpose of reducing the pressure of air, water or the like delivered thereto, a diaphragm in the valve casing subjected to the fluid pressure in the valve casing and adapted to move in sense under the influence of said pressure. . . .

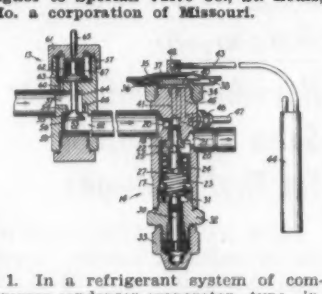
Week of Jan. 26

2,922,290. AIR CONDITIONING SYSTEM. Thomas W. Carraway, Dallas, Tex.



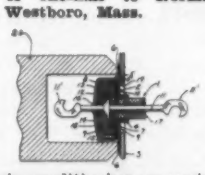
1. In a plant for air conditioning a space and including a structure having walls defining a first and a second chamber, a refrigerant compressor and a condenser in the first chamber, a refrigerant evaporating coil in the second chamber, ducts including refrigerant control valve means for connecting said compressor with said condenser and said evaporating coil in circuit. . . .

2,922,292. VALVE ASSEMBLY FOR A REFRIGERATION SYSTEM. Harold T. Lange, Huntleigh Village, Mo., assignor to Sporlan Valve Co., St. Louis, Mo. a corporation of Missouri.



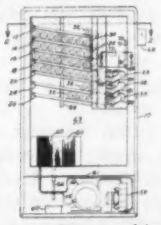
1. In a refrigerant system of compressor-condenser-evaporator type including a thermostatic expansion valve together with a thermal responsive device for actuating the expansion valve, a compensating valve mechanism located in the refrigerant line operatively ahead of said expansion valve....

2,922,293. WINDOW MOUNTED AIR CONDITIONING APPARATUS. Charles H. Peix, Whitinsville, Mass., assignor of one-half to Norman S. Blodgett, Westboro, Mass.



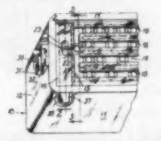
1. An air conditioning apparatus for a motor vehicle comprising an elongated streamlined main housing, a refrigerating system associated with the housing, a longitudinal, vertical wall dividing the housing into two halves, a first half having openings at the ends for the direct flow therethrough of air from the exterior of the vehicle in the direction of the length of the car. . . .

2,922,545. BOTTLE VENDING MACHINE. Romeo S. Denzer, La Crosse, Wis., assignor to La Crosse Cooler Co., La Crosse, Wis.



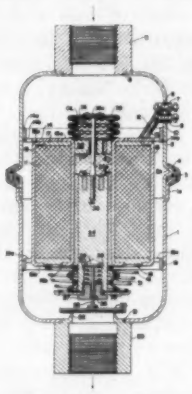
A product vending machine comprising a product storage compartment having a front wall with product release openings, gates pivotally mounted in said product storage compartment and normally extending across said product release openings to prevent the removal of products, slidably mounted cams, said cams being in engagement with said gates to be moved thereby, a plurality of slides in end to end abutting relationship. . . .

2,922,546. BOTTLE VENDING MACHINES. Frank Robert Trulaske, Grafton, Ill.



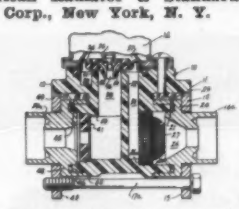
In a bottle vending machine including a cabinet, a vertical partition having an opening restricted in size for the passage of a single bottle, a transfer receptacle having a side-receiving opening, a top opening and a bottom discharge opening, means pivotally mounting said transfer receptacle for movement from a substantially vertical receiving position to an inclined discharge position. . . .

2,922,614. HUM-FREE SOLENOID DEVICE. Stanley W. Nickells, Minneapolis, Minn., assignor to Minneapolis-Honeywell Regulator Co., Minneapolis, Minn.



4. A control device comprising control means, a solenoid plunger connected to said means, a solenoid tube in which said plunger is arranged to move, said plunger being of slightly smaller diameter than the bore of said tube to form a restricted passage, a solenoid coil surrounding said tube, one end of said plunger being connected to a first movable wall that is sealingly connected to the adjacent end of said tube. . . .

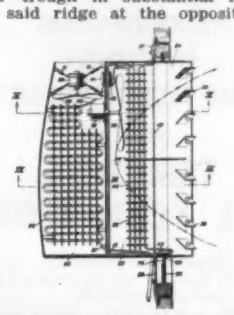
2,922,616. VALVE CONSTRUCTION. James Clarence Budde, Detroit, Mich., assignor, by mesne assignments, to American Radiator & Standard Sanitary Corp., New York, N. Y.



1. The combination comprising a thermoplastic valve body having a flow opening in one of its faces; an annular deformable gasket positioned on said face concentric with the opening; a tubular metal coupling element having an inner smooth surfaced section positioned in the opening, an annular flange positioned on the gasket. . . .

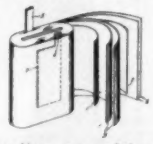
2,922,936. CAPACITOR ASSEMBLY. William F. Dehn, Wauwatosa, Robert S. Hower, Whitefish Bay, and Heinz M. Schlicke, Fox Point, Wis., assignors to Allen-Bradley Co., Milwaukee, Wis. a corporation of Wisconsin.

4. A capacitor assembly comprising a sheet metal mounting portion with a flat central area, said mounting portion being formed to provide a ridge at one side thereof and a shallow solder trough in substantial register with said ridge at the opposite side



thereof, which ridge and trough are formed in the sheet metal along the periphery of the flat central area, and a mounting tab extending laterally of the outside of the trough which is separated from the flat central area by the solder trough. . . .

2,922,937. CAPACITOR AND DIELECTRIC MATERIAL THEREFOR. John R. Hutzler, Fort Edward, N. Y., assignor to General Electric Co., a corporation of New York.



4. A capacitor comprising, in combination, cooperating armatures and dielectric spacer material therebetween, said dielectric spacer material including the solid co-polymerization product of a mixture in percent by weight of 5-90% vinyl toluene, 1-10% divinyl benzene, and at least one compound selected from the group consisting of styrene, alpha methyl styrene and alpha methyl polystyrene. . . .

Predicts Phenominal Rise In Sales of 'Forced Humidifiers'

NEWARK, N. J. — John B. Feldermann, president of Walton Laboratories, Inc., Irvington, N. J., quoted facts and figures which indicate that a "phenomenal increase" in "forced humidifier" sales may be anticipated for the coming year.

Addressing the annual meeting of exclusive Walton distributors at the Essex House, Feldermann reported a near-doubling of Walton humidifier sales during the past year and predicted an even greater anticipated rise during the coming year "in the light of both the public and industry's recognition of the need for more effective humidification to combat dry air problems."

As proof of this prediction, Feldermann reported that the great majority of his distributors have already placed humidifier orders averaging 50% greater than their total sales for last year.

"Forced humidifiers are about to become a major item for the average dealer," he declared. "With heating and air conditioning markets fairly stabilized, quality humidifiers such as Walton's provide the logical way for the dealer to obtain considerable added income."

In anticipation of this increased market, Feldermann revealed that the production facilities of the Walton plant have been significantly expanded and that they plan to maintain full production throughout the summer months in order to insure prompt delivery in the fall.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

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Uses, Advantages of Flexible Ducting Outlined

GUILFORD, Conn. — A new manual explaining the uses and advantages of flexible ducting in the air conditioning industry has been prepared by Flexible Tubing Corp. here.

The manual is called "The Facts About Thermaflex." Use of the flexible tubing products is claimed to make possible savings in installation costs and improved air flow characteristics. The flexibility of Thermaflex permits future changes in interior layout without expensive alterations, it was pointed out.

"Thermaflex is a lightweight flexible duct designed for both high and low pressure air conditioning systems," the company pointed out. "It is constructed of a 3-ply laminate material supported by a galvanized spring steel wire helix. The laminates are 1) woven fiber glass impregnated with a resinous elastometric compound, and 2) two flexible aluminum sheets.

"A second type is constructed of a vinyl-coated, spring steel wire helix with a vinyl-coated woven fiber glass cover. In both types, the materials are permanently bonded to form a continuous uninterrupted cover."

The free manual is available from Flexible Tubing Corp., Guilford 2, Conn., by inquiring on a company letterhead.

●

American-Standard Catalogs Coil Line

DETROIT — A new 44-page bulletin (B-1518) illustrating and describing the American-Standard line of heavy duty coils for steam, steam distribution, and hot water is now available from American-Standard Industrial Div., Detroit 32, Mich.

"Among the unique data contained in the new bulletin is complete condensate rating information for both saturated and superheated steam," it was stated. "Also presented is a typical material specification for coil applications involving temperatures and pressures which exceed standard coil construction limits.

"Installation recommendations are also presented along with piping diagrams typical of the various systems in which the American-Standard coils are used."

●

Airtemp Issues Installation Manuals

DAYTON—A new series of installation instruction manuals are now available on Chrysler Airtemp heating, cooling, and room air conditioners.

Manual ME-130 contains room air conditioner installation instructions; ME-131 deals with cooling installation instructions; and ME-132 with heating installation instructions.

These manuals are available through Advertising Distribution Center, Chrysler Corp., Airtemp Div., P.O. Box 1037, Dayton 1, Ohio.

●

Howell Bulletin Is On Motor Selection

HOWELL, Mich. — A new eight-page "Motor Selector" (Bulletin L-1661A) is available from Howell Electric Motors Co. here.

It lists in brief, easy-to-use arrangement, a quick reference to the complete motor and generator lines available through the consolidation of Howell with Ohio Electric Mfg. Co., Kingston-Conley, Inc., and Leland Ohio Electric Co.

'Gem-Foam' Properties Subject of Bulletin

TRENTON, N. J.—Thermal, mechanical, and chemical properties of "Gem-Foam," a low temperature pipe insulation molded of polyurethane foam for service between absolute zero and plus 250° F., are given in a new bulletin published by Baldwin-Ehret-Hill, Inc., 500 Breunig Ave., Trenton 2.

"Gemfil," a foam-in-place polyurethane insulation for use on flanges, valves, and fittings, is also described in the four-page brochure.

●

'Review of Vacuum for Service' Published

PITTSBURGH—A new book, "Review of Vacuum for Service Engineers," written by Harold G. Saunders and Emmett C. Williams, has been published by Airserco Mfg. Co., 435 Melwood Ave., Pittsburgh 13, Pa.

Williams, president and general manager of Airserco, is an inventor, designer, and supplier of many instruments and equipment for the refrigeration industry.

Saunders, vice president in charge of sales at Airserco, has long been known as an authority on the many uses of vacuum, vacuum pumps, and vacuum gauges in industry, it was pointed out.

The publication explains, in a non-technical manner, the fundamentals of vacuum for the service engineer. It contains seven chapters, 110 pages with 35 charts, photographs, and diagrams. Its size is 5½ by 8½ in. and it is plastic bound. Price is $4 per copy.

●

Kirsch Catalogs Custom, Standard Condensers

STURGIS, Mich. — The Refrigeration Div. of the Kirsch Co. here has published a new catalog which illustrates and describes its complete lines of custom and standard steel condensers for static and forced draft applications. It is designed as an information guide for refrigeration, air conditioning, and vending machine engineers.

REQUESTS for literature described on this page should be directed to the companies offering the material. For your convenience the address of each firm is listed in the story.

Selling Electric Heat Is Topic of Guide

PITTSBURGH — An electric heating merchandising guide called "Contractors Profit Plan," is available from Westinghouse Electric Corp.

This new booklet describes a simple step-by-step plan to help contractors promote and sell residential electric heating, the company said.

The 10-page booklet (SA-8539) contains sections that illustrate the merchandising aids available from Westinghouse; how the sale of electric heating products can be tied in with the company's "Total Electric Home" program; and general details of cooperative advertising plans that are available to electrical contractors.

For a free copy of "Contractors Profit Plan," write Westinghouse Electric Corp., P.O. Box 2099, Pittsburgh 30, Pa.

●

'Economic Thickness' of Insulation Emphasized

NEW YORK CITY — "Rethinking Thermal Insulation," a new booklet, is a guide to the best use of thermal insulating materials under the changing conditions of modern industry, according to the National Insulation Manufacturers Association.

It emphasizes the "economic thickness" approach to specification, which enables management and engineers to determine the point at which insulation gives the greatest financial return for its cost, considering both operating and capital savings, NIMA pointed out.

The booklet contains an index to ASTM and government specifications, as well as a section on "Economic Thickness—How to Figure It." A worksheet on economic thickness is also included.

Copies are available free from National Insulation Manufacturers Association, 441 Lexington Ave., New York 17, N. Y.

●

Open-Coil Duct Heater Is Bulletin Topic

ST. LOUIS—Industrial Engineering & Equipment Co., 24 Hanley Industrial Court, St. Louis (Brentwood) 17, Mo., has published Edition 9 of Bulletin E-97U — "Electric Blast Coil Space Heaters for Duct Installation."

"This bulletin contains 32 pages of information on the open coil duct heater that is UL listed, easily installed in the ductwork, requires no floor space, wall space, or flue, and has proven trouble-free in many thousands of installations," the company stated.

"New information includes: Several hundred heaters stocked for quick delivery; new UL listed, slip-in construction available, fits into existing ductwork.

"Stock sizes are shown from 1,000 to 30,000 watts (B.t.u.h. rating of 3,400 to 102,000). Custom sizes from 500 to 1,000,000 watts (B.t.u.h. rating of 1,700 to 3,412,000)."

Address Given for RAC Price Reporter

MANHATTAN BEACH, Calif.—The May 23 issue of the NEWS carried the announcement of the new issue of the RAC Price Reporter, published by Edwin Coates at 1809 Manhattan Beach Blvd., Manhattan Beach, Calif., but inadvertently the publisher's address was omitted.

RAC Price Reporter lists and illustrates parts and supplies used by refrigeration, air conditioning, and heating contractors.

More than 325 manufacturers' products are listed and illustrated in the loose leaf binder published by RAC Price Reporter.

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THIS ADVERTISEMENT addressed to manufacturers of air conditioning, heating, registers, grills, air filters, etc. interested in volume sales to distributors and key dealers desiring excellent representation in Florida. I have record of sales in excess of two million dollars without a penny lost in collections. BOX A6567, Air Conditioning, Heating & Refrigeration News.

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OPPORTUNITY IN Great Britain—An important British engineering group specializing in refrigeration and air conditioning, and a licensee of a major United States Company is seeking a sales executive with U.S. sales experience in air conditioning or relative lines desiring to live in England. Position as director of sales with full responsibility for organizing and directing a new sales department. A real growth opportunity with top salary and benefits—moving expenses paid. Replies treated in confidence. Please write to Mr. William Vandersteel, President, AMPOWER CORPORATION, 50 Broad Street, New York 4, New York.

MECHANICAL ENGINEER — experienced in air conditioning and refrigeration heat transfer design and guidance in application of this equipment is wanted by an Italian company located in Milan - Italy—Reply with resume of experience and qualifications stating salary requirements—Address GRILLI PIAZZALE MACIACCHINI, 20 Milan, Italy.

PRODUCT DEVELOPMENT engineer (Air Conditioning) — National concern desires engineer that can head up air conditioning and heat pump program. Must be capable of making original design layouts on packaged and split system residential air conditioners. Should be well acquainted with UL test procedures. Excellent benefits including tuition refund plan for advanced study in local university and schools. Location, western New York state. Salary commensurate with experience. BOX A6561, Air Conditioning, Heating & Refrigeration News.

PROCESS ENGINEER—Heavy experience in process engineering preferably in small to medium home air conditioning units. Applicant must be familiar with modern methods of manufacture and tooling. Location, western New York state. Salary commensurate with experience. BOX A6562, Air Conditioning, Heating & Refrigeration News.

REFRIGERATION COMPRESSOR service manager for leading national compressor manufacturer. Minimum 5 years in practical application of refrigeration systems. Liberal benefits. Salary open. Early interviews. Send background to BOX A6570, Air Conditioning, Heating & Refrigeration News.

EQUIPMENT WANTED

USED AND repairable or new compressors and condensing units above 5 h.p. Also need surplus parts for G. E., Brunner, Copeland, Mills, Worthington, Par, etc. Give full descriptions and part numbers. Don't junk it; we'll buy it. UNITED REFRIGERATION CORPORATION, 514 W. 12th St., Los Angeles 15, California.

EQUIPMENT FOR SALE

HERMETIC COMPRESSOR rebuilding & replacement parts. Warriner Hermetic Inc. and Warriner Parts Inc. are pleased to announce the opening of their newest plant in Fort Worth, Texas. Warriner Hermetic Inc. specializes in the rebuilding of Tecumseh and Copelametic compressors. The new plant will increase the rebuilding capacity up to 75,000 compressors per year. Warriner Parts Inc. specializes in the manufacturing of replacement parts for Tecumseh and Copelametic compressors. Replacement parts for most all Tecumseh hermetic compressors sizes 1/6 through 5 h.p. includes terminal assemblies, gaskets, internal mounts, valves, roters, crankshaft pistons, bolts, compressor bodies, suction mufflers, discharge manifold, bearing housings. Replacement parts for Copelametic compressors include most all parts and specialize in valves, bearings and gaskets. Write today for the new 1960 Warriner catalogue and full information. DAVID B. RUTHSTROM, 801 Rosine Street, Houston, Texas. Phone JA-9-8669, HO-8-1489.

ATTENTION REFRIGERATION Servicemen: Send for catalog listing values in refrigeration and air conditioning parts, relays, capacitors, compressors. Savings up to 50%. WALTER W. STARR, 2833 Lincoln Ave., Chicago 13, Illinois.

UNITED CONTROL And Relay Repair Co. Domestic controls, relays and defrost timers repaired. New controls and relays in stock. 151 E. 126 St. NEW YORK 35, N. Y. Send for price sheet.

THERMOSTATIC EXPANSION valve —Europe's best—⅛-1 ton F-12 now available stocked in U.S. Immediate delivery for manufacturers, contractors, territories open for representatives, wholesalers, 1 year guarantee, small efficient, reliable—priced under market. Write BOX A6563, Air Conditioning, Heating & Refrigeration News.

ARW Sites--

(Continued from Page 1, Col. 2)

tion independent of the show.

"A survey was prepared and sent to all members asking three basic questions: Should ARW hold its convention in conjunction with the ARI show? Should ARW hold its convention in conjunction with the International Heating, Air Conditioning and Ventilating Show; or should ARW hold its convention independent of such shows?

2 to 1 In Favor of Tying In with Big Shows

"The results of the survey was two to one in favor of tying in with these shows.

"In analyzing the returns, the Committee found most members interested in attending a convention that would bring manufacturers and trade in the greatest number. In addition, they wanted the opportunity of seeing products. It was the consensus of the members that by tying in with industry shows such could be accomplished and with a savings in time and money."

Said William Miessemer, ARW president: "A two to one majority was our guide in making the decision to hold our conventions in February each year.

"This does present some problems to us. By constitution we must hold an annual meeting to elect officers and conduct the business affairs of the association.

"Since we are scheduled for our annual meeting in October 1960 aboard the *S.S. Hanseatic,* we will probably postpone the election of 1961 directors offices and directors until February 1961. At that time we will hold a short convention in Chicago.

Affirm Belief In Importance of Industry Shows

"We believe that a quorum of members will attend this convention even though it is just four months after the Hanseatic meeting. From there on we will work on a fiscal year starting March 1. All of this, of course, is subject to the approval of the members."

"We believe in the importance of such industry shows and we hope that our action affirms this to ARI and ASHRAE who sponsor these shows," Miessemer went on.

"We further encourage those other industry associations to hold their conventions in conjunction with these shows. It will mean greater participation to all concerned, we believe, and it will dramatize to the public the strength of the refrigeration, air conditioning, and heating industries."

Thom Muir, executive director of ARW, stated no decision on hotel locations or firm dates had been established yet, although February 11 and 12, 1961 will be the probable dates in Chicago.

NEWS readers are invited to write to the editor giving their opinions on any subject of interest to the industry.

Louisiana Ponders Certificates--

(Continued from Page 1, Col. 3)

would supervise work on "all connections to electric, gas, water drain, and other facilities brought out by others within 10 ft. of refrigeration or air conditioning equipment."

The measure was introduced by Rep. Peter Murtes and Rep. Joseph Casey, of New Orleans, shortly after some 90% of the air conditioning contractors in New Orleans said they would stage an industry-wide "vacation" unless the city council passed a similar licensing ordinance. The mass walk-out is scheduled to start July 1 and continue for a month.

The state certificates would be issued only to applicants 21 years old or older with five years of experience, or with a trade or technical school education.

The application also would have to be accompanied by three affidavits from other contractors attesting to the applicant's experience and character.

The board would charge $100 for original application and the certificate. Renewals each Dec. 31 would cost $25, as would reapplication papers.

The proposed legislation provides for suspension or revocation of certificates when and if the contractor was "proven guilty of violating any ordinance or law . . . or is guilty of any faulty repair, servicing, or installation work which is dangerous to life or property."

This procedure would be handled at a public hearing and fines would range from $25 to $100 or a maximum imprisonment of 90 days. The contractor also could appeal the action in a court in the same district where he works.

The board, to be known as the Refrigeration and Air Conditioning Board of the State of Louisiana, would include:

1. Five persons from the memberships of Louisiana Refrigeration & Air Conditioning Contractors, Inc., Air Conditioning & Refrigeration Trades Association of Louisiana, Inc., and Master Refrigeration & Air Conditioning Association, Inc.

All would have a minimum of five years' experience and be named by the governor.

2. Two members appointed in a similar manner from the American Society of Heating, Refrigerating & Air-Conditioning Engineers, and the American Society of Mechanical Engineers.

All would serve for a period of four years and would be reappointed or replaced by the next governor.

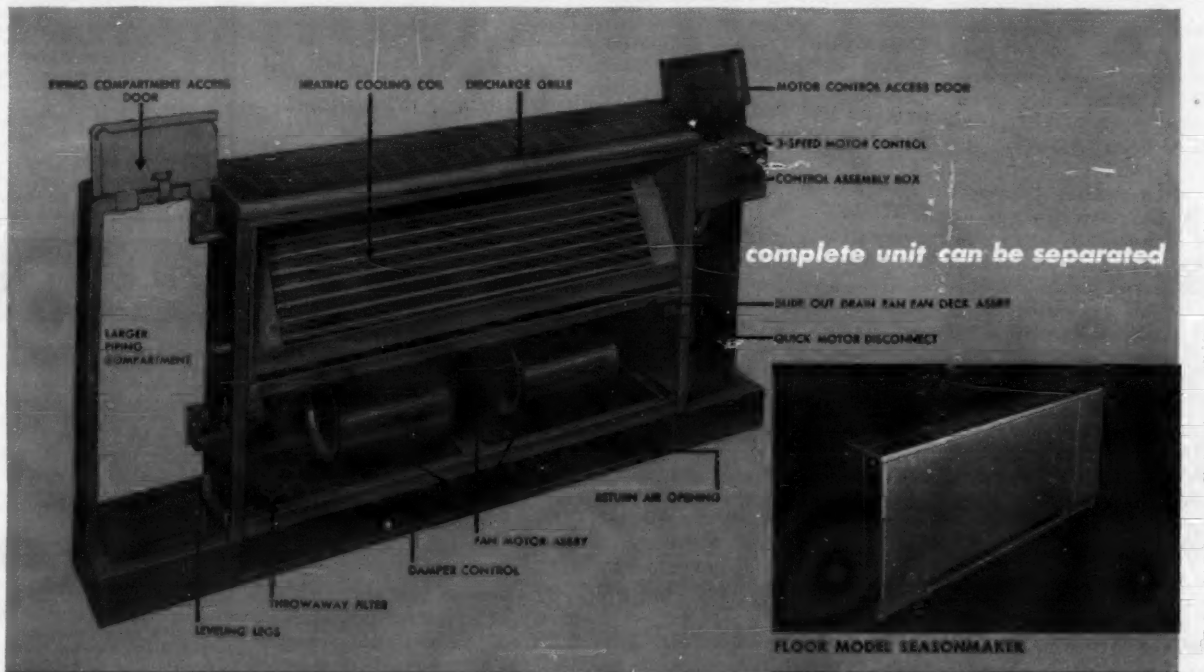
Cool Canines, Pine Paneling, and a Psychology Professor

ROANOKE, Va. — "A dog's life" ain't what it used to be! At least, not in the case of nine beagle puppies who won a 10-week study course on the campus of Hollins college for girls.

Dr. Alvin D. Calvin, associate professor of psychology, will teach the pups a course in discipline on a grant from the U. S. Public Health Service. And they'll be housed in air conditioned, pine panelled quarters and eat a special diet.

Donald Taylor Dies

ATLANTA — Donald Taylor, 61, owner of Taylor Heating & Air Conditioning Co., died at his home here recently.



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